

A SKINNY FELLOW  
HASN'T A CHANCE.  
I WISH I COULD  
GAIN SOME FLESH

YOU CAN—EASILY.  
I'LL TELL YOU HOW  
TO GAIN POUNDS  
QUICKLY. LISTEN—

## Skinny! New way adds pounds—double quick!

*Astonishing gains with sensational new double tonic. Richest yeast known, imported brewers' ale yeast, now concentrated 7 times and combined with energizing iron. Gives 5 to 15 lbs. in a few weeks*

FOR years doctors have prescribed yeast for skinny, run-down men and women who want to put on flesh. But now, thanks to a remarkable new scientific discovery, you can get even better results—put on firmer, healthier flesh than with ordinary

yeast—and in a far shorter time.

Not only are thousands quickly gaining pounds of solid, beauty-bringing flesh—but other benefits as well. Muddy, blemished skin changes to a fresh, glowing, radiantly clear complexion. Constipation, poor appetite, lack of pep and energy vanish. Life becomes a thrilling adventure.

### Concentrated 7 times

This amazing new product, called Ironized Yeast, is in pleasant tablet form. It is made from specially cultured *brewers' ale yeast* imported from Europe—the richest yeast ever known—which by a new process has been concentrated 7 times—made 7 times more powerful.

But that is not all! This marvelous, health-building yeast concentrate is then *ironized* with three special kinds of iron which strengthen and enrich the blood—add abounding new energy and pep.

Day after day, as you take Ironized Yeast, watch ugly, gawky angles fill out. Hollow chests develop and pipe-stem arms and legs round out. Complexion becomes clear—indigestion disappears—you'll have new, surging vitality, new self-confidence.

### Results guaranteed

No matter how skinny and weak you may be, this marvelous new Ironized Yeast should build you up in a few short weeks as it has thousands of others. If not delighted with the results of the very first package, your money instantly refunded.

Only be sure you get genuine Ironized Yeast, not some imitation that cannot give same results. Insist on the genuine, with "IY" stamped on each tablet.

### Special FREE offer!

To start you building up your health right away, we make this absolutely FREE offer. Purchase a package of Ironized Yeast at once, cut out the seal on the box and mail it to us with a clipping of this paragraph. We will send you a fascinating new book on health, "New Facts About Your Body", by a well-known authority. Remember, results are guaranteed with the very first package—or money refunded. At all druggists. Ironized Yeast Co., Dept. 602 Atlanta, Ga.

### 12 Lbs. in 3 Weeks

"After taking Ironized Yeast three weeks I gained 12 pounds."  
Frank Piccuar, 6355 S. Washington Ave., Chicago, Ill.

### 14 Lbs. in 21 Days

"Before 21 days were up I had gained 14 pounds. My complexion was muddy and is now perfect."  
Yvonne Murray, 906 Dixie Overland Blvd., Shreveport, La.

February, 1934

ASTOUNDING STORIES

A STREET & SMITH PUBLICATION

# ASTOUNDING

## STORIES

FEB  
1934

20¢



LOST  
CITY  
of  
MARS

by  
HARL VINCENT

REBIRTH

by Thomas McClary

# BE A RADIO EXPERT

Many Make

**\$40 \$60 \$75**  
a Week

**I'll train you at home for many Good Spare Time and Full Time Radio Jobs**



J. E. Smith has directed the Home Study training of more men for Radio than any other man in America.



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Spare-time set servicing pays many N. R. I. men \$5, \$10, \$15 a week extra. Full-time men make as much as \$40, \$60, \$75 a week.



## Broadcasting Stations

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## Radio Factories

Employ testers, inspectors, foremen, engineers, servicemen, for jobs paying up to \$7,500 a year.

## Aircraft Radio

Radio is making flying safer. Radio operators employed through Civil Service Commission, earn \$1,000 to \$2,000 a year.

If you are dissatisfied with your present job; if you are struggling along in a rut with little or no prospect of anything better than a skimpy pay envelope—clip the coupon NOW. Get my big FREE book on the opportunities in Radio. Read how quickly you can learn at home in your spare time to be a Radio Expert—what good jobs my graduates have been getting—real jobs with real futures.

## Real Opportunities Ahead for Trained Men

It's hard to find a field with more opportunity awaiting the trained man. Way in 1932—the worst year of the depression—the Radio Industry sold \$200,000,000 worth of sets and parts! Manufacturers alone employed nearly 100,000 people! About 300,000 people worked in the industry. In 1932, broadcasting had its most profitable year. It's a gigantic business, even in the worst business years! And look what's ahead! Millions of sets becoming obsolete annually. 17,000,000 sets in operation that need servicing from time to time! Over 600 great broadcasting stations furnishing entertainment and news to 100,000,000 people. These figures are so big that they are hard to grasp! Yet, they are all true! Here is a new industry that has grown quickly into a commercial giant.

## Get Into This Field With a Future

There's opportunity for you in Radio. Its future is certain. Television, short wave, police Radio, automobile Radio, midwest sets, loud speaker systems, aircraft Radio—in every branch, developments and improvements are taking place. Here is a real future for thousands and thousands of men who really know Radio. Get the training that opens the road to good pay and success! Send the coupon now and get full particulars

on how easy and interesting I make learning at home. Read the letters from graduates who are today earning good money in this fascinating industry.

## Many Make \$5, \$10, \$15 a week Extra in Spare Time Almost at Once

My book also tells how many of my students made \$5, \$10, and \$15 a week extra servicing sets in spare time, soon after they enrolled. I give you plans and ideas that have made good spare-time money—\$200 to \$1,000 a year—for hundreds of fellows. My Course is famous as "the one that pays for itself."

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I am so sure that N. R. I. can train you at home satisfactorily that I will agree in writing to refund every penny of your tuition if you are not satisfied with my Lessons and Instruction Service upon completion. You'll get a copy of this Agreement with my book.

## 64-page Book of Information Free

Get your copy today. It's free to any ambitious fellow over 15 years old. It tells you about Radio's spare-time and full-time job opportunities; it tells you all about my Course; what others who have taken it are doing and making. Find out what Radio offers YOU without the slightest obligation. MAIL THIS COUPON NOW. J. E. SMITH, President National Radio Institute Dept. 4AD Washington, D. C.



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Installation and service work is another growing, money-making field for trained Radio men.



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THIS COUPON IS GOOD for  
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mail it  
now

J. E. SMITH, President  
National Radio Institute, Dept. 4AD  
Washington, D. C.

Dear Mr. Smith: Without obligating me, send your free book about spare-time and full-time Radio opportunities and how I can train for them at home in my spare time. (Please print plainly)

Name..... Age.....

Address.....

City..... State.....

AMERICAN PUBLICATIONS

On Sale Third Wednesday of Each Month

VOLUME XII  
NUMBER 6

# ASTOUNDING STORIES

FEBRUARY  
1934

A STREET & SMITH PUBLICATION

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## and I'll furnish a Car... to producers

Here's a bona fide employment offer, a quick, new, easy way to stop your money worries—pay your bills—lift the mortgage—buy a home—have plenty of cash in your pocketbook. Operate one of my good-paying Food Routes in your home locality—start earning money immediately.



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Deserving men and women are being put back to work daily. Everybody knows there is nothing like a good, steady food route for a fine weekly cash income. Our established Tea and Coffee Routes offer permanent employment to both men and women. No experience required—no stock to carry—no long course of training necessary.

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Your job will be simply to take care of customers' orders on a route in your own locality. You deliver the goods, collect all the cash, and keep a big share of what you take in for yourself. Established route belongs to you. The work is light and the pay is exceptionally good. Hundreds of people are now waiting to be served in many localities. Better send me your name today.

### Have Year 'Round Income

Think how wonderful it is to have a nice income every week in the year. No more tramping around looking for a job. No searching for work. That's what I am offering you. My plans take away the uncertainties of the future—they offer you a job that ends all your wor-

ries about money. If you are a good, honest person and willing to follow a few simple instructions while calling on waiting route customers, I can offer you a bona fide chance to make up to \$42.50 a week right to start, and a splendid opportunity for steady cash increases.

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You have probably never worked for a boss who didn't want to limit your pay at the end of the week. I never discharge my helpers for making big wages. Think what it would mean to say to yourself on Monday morning: "I want \$40.00, \$50.00, or even \$60.00 this week," or whatever amount it takes to pay your bills and have enough left to make you happy and contented, and then get it at the end of the week.

That's just the kind of an unlimited offer I am making you now. If you are honest, conscientious and willing to follow a few simple instructions, I won't put any limit on your earnings. Just how all this works for you is fully explained in my big free booklet that I want to send you just as soon as I get your name.



### Make More than a Living Wage

I am not satisfied to see my helpers make just a living wage. They must be prosperous. They must have plenty of money to enjoy the good things of life. I don't want to limit the pay you get at the end of the week. If you will send me your name I'll show you how Wm. E. Berkhimer, Pa., made

### \$90.00 in a Single Week

I'll tell you the frank story of O. P. Hertzig, Pa., who made \$85.50 in a week; or Jacob Brown, Ill., who netted \$30.00 in one day; or Mrs. Emma M. Juras, N. H., who made \$75.00 in one week working six hours a day. I'll tell you how A. L. Blumauer, Ark., without experience, made \$9.00 the first three hours. I have hundreds of letters of exceptional earnings like these in my office from my helpers. Now I am offering you a proposition even better than I gave to these people. Will you listen, please? Will you give me a chance to explain my sensational new Route Plan? Costs nothing to investigate.

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### Don't Send Money—Just Your Name

I don't want your money. What I need is help. I want a fair chance to lay the facts before you so you can decide for yourself whether you like the work and whether the pay is satisfactory. If you want a sure, steady chance to make up to \$42.50 a week with an old, reliable, nationally-known, million-dollar manufacturing company, then I urge that you get the facts now. Find out just what you can do for you. Costs you nothing. You don't risk a penny. I take all the chances—you must be satisfied—everything is guaranteed. Let me place positive proof in your hands. Then you can decide for yourself. This may be just the job you are looking for—you may be just the person I want. Send name on coupon or penny postcard—do it today.



### I Need Men and Women at Once

This is not just a "one man" job that I am offering you. I have enough vacancies so I can put a number of men and women to work. Better send name today.

### Do These Three Things Now

- 1. Mail Coupon.**  
Do this today—right now—don't wait.
- 2. Read Facts.**  
I'll send you a simple, straightforward statement of just what I have to offer you.
- 3. Start to Work for Me.**  
There is no waiting and no delay. The sooner you start, the sooner you will have cash in your pocket.

### Application for Employment Offer

ALBERT MILLS, Employment Mgr.  
450 Meamouth Ave., Cincinnati, Ohio

Please send me confidential information about your employment offer. Tell me how I can get started on one of your Routes in my locality and make up to \$42.50 a week at once. I am to be under no obligation.

Name .....  
Address .....  
.....

(Please Print or Write Plainly)

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when answering advertisements



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I received fewer and fewer invitations. Only long, dreary evenings seemed to be in store for me.



Then one day I read about a new way to learn music that had made popular musicians of thousands.



The Free Demonstration Lesson proved that this way of learning music was as easy as A-B-C. Real fun, too!



Then came Janet's party. All were fascinated when I offered to play . . . and actually did!



No more lonesome evenings now. My musical ability has brought me romance—Bill and I have announced our engagement.

# Learn MUSIC this Quick, Easy Way

## —shortest road to friends, popularity, good times

THE interesting story told above is not just one unusual case. It is typical of the experiences of more than 600,000 other folks who have learned music—who have become socially popular—this quick, modern, easy as A-B-C way.

You, too, can learn to play—to entertain others—to pep up any party—just as these thousands of others are doing. And best of all you can accomplish this without the expense of a private teacher. You'll practically teach yourself—right in the quiet of your own home—in a much shorter time and at only a fraction of the cost of the old fashioned way.

### You don't need to be talented

Don't get the idea that you have to be a musical genius—that you have to be talented—or that you need previous musical training to learn by this method. And, unlike the old fashioned way, you don't have to

spend hours and hours playing monotonous scales and hand-drum finger exercises until you're ready to give up the whole business.

You start right in playing real little tunes almost from the very start. Gradually you master more and more difficult ones until—sooner than you ever expected—you find yourself entertaining your friends—playing at parties—and having the best times you ever had in your whole life.

playing a game. Practicing becomes real fun instead of a bore as it used to be with the old way.

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In order to show how easy and pleasant this course is, the U. S. School of Music has prepared for you a free Demonstration Lesson and Explanatory Booklet. No matter what instrument you select to play, the Free Demonstration Lesson and Booklet will show you at once the amazingly simple principles around which this method is built. If you really want to learn music—if you want to win new popularity—if you want to enjoy musical good times galore—fill in and mail the coupon below. Don't delay—act at once. You'll not be obligated in any way. Instruments supplied when needed—cash or credit. U. S. School of Music, 3591 Brunswick Bldg., New York City.

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- |                                    |           |
|------------------------------------|-----------|
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| Ukulele                            | Flute     |
| Coronet                            | Saxophone |
| Trombone                           | Harp      |
| Piccolo                            | Mandolin  |
| Guitar                             | Celli     |
| Hawaiian Steel Guitar              |           |
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20x6-50-21		2.40	.85	31x4	2.55	.75	
20x4-75-18		2.45	.85	32x4	2.55	.85	
20x4-75-20		2.50	.90	32x4	2.55	.85	
20x4-90-19		2.55	1.00	32x4 1/2	2.55	.85	
20x4-90-20		2.55	1.00	32x4 1/2	2.55	1.15	
20x6-25-18		2.60	1.12	32x4 1/2	2.48	1.35	
20x3-25-18		2.55	1.12	32x4 1/2	2.48	1.12	
20x3-25-20		2.55	1.15	30x3	2.55	1.55	
31x4-20-21		2.55	1.12	32x3	2.75	1.45	
20x3-65-18		2.55	1.12	32x3	2.75	1.45	
20x3-65-19		2.55	1.15				
20x4-90-18		2.40	1.15				
20x4-90-20		2.45	1.25				
20x4-90-21		2.55	1.25				
22x6-50-20		3.75	1.32				

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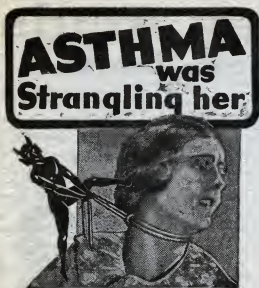
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**CHELSEA HOUSE**  
 79 Seventh Ave., New York City



# ASTHMA was Strangling her



Illustration

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"THE TRUTH ABOUT THE HAIR"

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But when your Kidneys need help, don't take chances with drastic or irritating drugs. Be careful. If poorly functioning Kidneys or Bladder make you suffer from Getting Up Nights, Leg Pains, Nervousness, Stiffness, Burning, Smarting, Itching Acidity, Rheumatic Pains, Lumbago, Loss of Vitality, Dark Circles under the eyes, or Dizziness, don't waste a minute. Try the Doctor's prescription Cystex (pronounced Siss-tex). See for yourself the amazing quickness with which it soothes, tones and cleans raw, sore irritated membranes.

Cystex is a remarkably successful prescription for poorly functioning Kidneys and Bladder. It is helping millions of sufferers, and many say that in just a day or so it helped them sleep like a baby, brought new strength and energy, eased rheumatic pains and stiffness—made them feel years younger. Cystex starts circulating through the system in 15 minutes, helping the Kidneys in their work of cleaning out the blood and removing poisonous acids and wastes in the system. It does its work quickly and positively but does not contain any doses, narcotics or habit-forming drugs. The formula is in every package.

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### City Health Doctor Praises Cystex

Doctors and druggists everywhere approve of the prescription Cystex because of its splendid ingredients and quick action. For instance, Dr. W. R. George, graduate Medical Dept., University of Indiana, former Health Commissioner of Indianapolis, and Medical Director for Insurance company 10 years, recently wrote the following letter:



Dr. W. R. George

"There is little question but what properly functioning Kidney and Bladder organs are vital to the health. Insufficient Kidney excretions are the cause of such needless sufferings with aching back, weakness, painful joints and rheumatic pains, headaches, and a general run-down, exhausted body. This condition also interferes with normal rest at night by causing the sufferer to rise frequently for relief, and results in painful excretions, itching, smarting and burning. I am of the opinion that Cystex definitely corrects frequent causes (poor kidney functions) of such conditions and I have actually prescribed in my own practice for many years past the same ingredients contained in your formula. Cystex not only exerts a splendid influence in flushing poisons from the urinary tract, but also has an antiseptic action and assists in freeing the blood of retained toxins. Bacteriologists I do not so meritorious a product deserves the endorsement of the Medical Profession, I am happy indeed to lend my name and photograph for your use in advertising Cystex." Signed W. R. George, M. D.

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# COMING UP?

*It has been interesting watching ASTOUNDING grow, hasn't it?*

*For several years it was a loyal friend. It disappeared—and now it has returned.*

*I think you'll agree with me that "up-to-now" every issue of the new ASTOUNDING has been a jump ahead of its predecessor.*

*It is alive and kicking and unafraid—and growing!*

*Why?*

*Why didn't some one tell science-fiction authors to throw off the old shackles; to give their imagination full play; to lash out and trample under all the taboos and restrictions and keep in step with to-day's men of science?*

*Why no one did this, I don't know—but we all know science-fiction was drifting into a rut, slowly and complacently.*

*We feel that the new ASTOUNDING is bringing super-science back to vigorous, vital life. We are breaking the old barriers. We believe the thought-variants are blazing a proud new trail—pioneering! And we know that we are seeing eye to eye with you. We appreciate your letters.*

*We are not deserting the old—but we are adding the new.*

*This month, Rebirth tears the life on earth loose from its foundations, and we watch spellbound while man fights back over the old, bitter trail, reconstructing civilization, conquering the elements with a rediscovered science. All of us needed this story to start our minds traveling along new thought-channels.*

*Next month, a favorite, all-too-seldom-seen author brings us the thought-variant. John Russell Fearn's title, The Man Who Stopped the Dust, doesn't begin to express the careful, calculated thought which makes the story great. It is a story for which you would look in vain through the pages of other magazines.*

*And so ASTOUNDING-STORIES advances. A long list of daringly original, vitally different stories await us. And more surprises are in store which will help us to make and keep ASTOUNDING the magazine you and I both want it to be. Ask your dealer to save your copy.—The Editor.*

# REBIRTH

Part  
One

*The Greatest Science Story of the Month  
Deals With the Rebirth of Science and of a  
Civilization Which Was Wrecked by Science!*

*Illustrated by Don Hewitt*

by Thomas Calvert McClary

## PROLOGUE

**L**ISTEN WELL, leaders of this new world.

For of all things that creep in the earth, swim in the sea, crawl on the land, fly in the air, or live out there in space, I alone know and can tell you what took place.

You think that I am thirty. You are wrong. I am ancient. My mind is old and wise. I am weary of wandering so long alone.

I belong to an older and more human life. I am an anachronism of thought. Some day I must die because of that. You do not tolerate disrupting influences on this utterly modern sphere.

Yet I will tell you the story. Not the story of the world or of the country. That would be too long. But the story of Goddard, Petersen, and Brent; of the city of New York; of the great experiment; and of an undying love.

I will tell it to you as I saw it from far, far out in space.

And how did I get out there?

That is not part of the story. But I will tell that, too.

Goddard has often laughed at that attempt to defy time and space by a younger Goddard of yesteryear. I could see and hear him laughing. That was very funny to me, because

the man who thinks he is Goddard is really Petersen. And Petersen is his friend, Goddard.

You can see that this is funny. Goddard did not think that I would come back to tell him he thought he was another man. He thought he would be dead.

Yet he is not dead, and he did achieve his goal. For here I am.

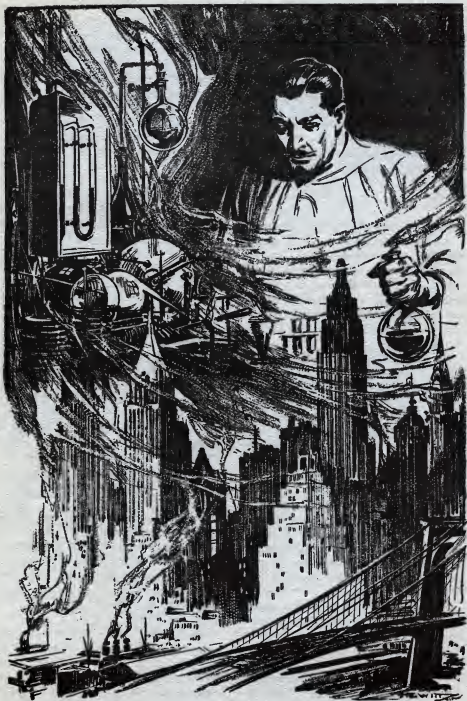
THE YEAR was 1940.

Three people sat around a dinner table. One, a ravishingly beautiful woman of twenty-one, soon to be called the finest pianist in the world. Another, possibly the greatest genius of all time: Goddard, a youth of eighteen, already performing miracles with electronics and chemicals. The third, myself, an ordinary newspaperman of thirty.

In all of Goddard's make-up, there was but one speck of common clay. Science was his god, his life, his soul. But his heart burned with a love so intense that a more human mortal would have been consumed by its very heat.

I, too, loved the woman. But my love was hopeless. Every fiber of her being responded to Goddard.

This night, she felt a mischievous mood. She playfully lashed Goddard with barbs of pricking wit. She told him he was not human and



*It was impossible for Goddard to realize fully the effect of what he intended to do.*



far too much of a genius. She said that he should have some of my better points and perhaps a few of my worse.

She jested. But Goddard feared that jest. He knew he was cold, not possessed of ordinary emotions. He feared that in some moment of hysteria she might turn to me.

Later he called me to his home. There was not room for both of us in the world, he said. I agreed. Yet it was, in its way, a friendly rivalry.

We made a pact. We cut the cards. High man was to do whatever the other said. Goddard won.

Two months later he flew me in his fast stratoplane to his hidden country laboratory, a place of which much was whispered but little known. This was the citadel of superelectronics that was to make his name magic within the coming years.

He showed me a set of wires intricately woven into an exact replica of man's brain. Sound and sight systems reproduced with wire so fine it barely showed beneath the most high-powered microscope. On those wires could be produced, atom for atom, electrical impulses exactly duplicating a human brain.

The idea was not hard to grasp. It was much like television, scrambled radio, and electrical decomposition and recomposition. A physical brain is susceptible to suspended animation like a body. But its component parts could be reproduced by electrical impulses.

He had made four improvements over man's brain. Sight and sound could be amplified millions of times at will. Similar to an X ray, the eyes could see through objects. The brain functioned at maximum capacity, countless times more efficient than the brain of a human being. It had an extra optic with which it

could magnify scenes while not losing sight of the whole. Like a road map, with cities many times enlarged so that you can see the streets.

Goddard came to the point. The time had come to keep my wager. He would send me into space for seventy-five years. At the end of that time I would return to my own body. It would be just as it was. It would be safe. A special vault, which could be opened from the inside, would keep it from marauders.

He made me drink of many chemicals and coated my body with preservatives. Lying on a table within sight of that weird electric brain, I felt numbness come over me. I was afraid. Yet the very madness of the idea dulled my senses.

My entire life flashed before me within seconds. Then I could not move.

He fixed wires to my neck and ears and eyes, and set two clocks in the panel which held the controls. One, he told me, controlled a magnetic aërial. At the end of seventy-five years, it would set the aërial in action and draw me back from space. The other clock controlled projection. It would place my mind in a safe spot in space and counteract gravity.

He tested the mechanism. It did not look elaborate. A few tubes, some wires and dials. Great currents of many-hued electricity rushed through the tubes, made spirals and arcs, went over the wires outlining the shape of a brain and eyes and ears.

Goddard forgot his reason for sending me into space. The cold intensity of science consumed him. With enthusiasm he told me that my experiences would rock the world seventy-five years hence. He did not expect to live so long.

I must break the machine upon return. It would be dangerous in the hands of an unscrupulous person.

My fear had passed. I am a fatalist. I sank into utter, endless darkness.

Then, faster than light, I was traveling through space, a brain, yet nothing; a mere wave of impulses.

*Seventeen years later I was to be the only human with memory in the universe.*

But Goddard did not know that then.

Now I have returned, just as he planned I should. I have broken the machine. And I will tell you of events which nobody in the old world foresaw, which no one person in the new world has seen.

FROM MY height in space, look back over the years and down upon New York on a September morning in the year 1957.

Note well the characters you see. They are the founders of a new life and modern world.

The city hit its normal work-day stride. A few people fired, fewer hired. A bank teller, white with conscience, answered an examiner as his boss watched him from a distance. A board of directors laughed at the chairman's latest joke. Their wives, in meeting, resolved to appeal for relief for the poor.

A steel worker slipped and fell. A baby born, a bright-eyed couple eloping, a traffic cop bawling out a taxpayer, an autogyro making a forced landing upon the upper auto ramp. Just an ordinary morning.

Rearing man's vanity into the very portals of the gods, skyscrapers dazzle the sun with the glory of gold, silver, and chromium towers.

Life within their majestic heights; on dark, dank streets and first, second, and third-level ramps;

far underground, beneath the level inhabited by the lowly worm; in subways, trams, elevateds, busses, private cars, autogyros, and on the moving sidewalks and countless craft upon the teaming rivers; in giant underriver tunnels and on weblike spans spreading a net over river, bay, and city; in penthouse apartments and stinking tenements and life-sucking factories and superefficient offices; everywhere the city beats with its kaleidoscopic, shifting sameness, giving the metropolis its life and character.

Suddenly, the city lifted its head and listened. The shadow of a mighty thing of evil passed across the sun. There were no clouds; the noise was less than the usual din. Yet—a sigh, a warning, an ominous stirring in space?

It is nothing. Yet, somewhere, something ringing, screaming—

The earth shuddered in fear and loneliness. Giant buildings cringed back into their shadows. Overhead, the sky, swept crystal blue, was cold with carelessness of the fate of man.

## I.

THE FOUR HORSEMEN of the Apocalypse, gone mad, flew shrieking over earth.

Man's memory, habits, knowledge, traditions were suddenly snatched from him!

He could not think. He had not rediscovered how to do that. He could not know what to do, for he knew nothing. His mind, blank as a new-born babe's, had only capacity to learn.

With a roar of pent-up hate, pierced by screams of frightened millions, water, steam, power, electricity, fire, chemicals, explosives, steel, and stone turned upon their proud creator, threatening annihila-

tion of human life throughout the world.

Twisting, climbing, swelling, and sweeping from street to street, from building to building, out and over the city and up into space—an invisible tidal wave rearing and beating itself upon a shore of fine-spun steel and glass—a terrible, rending, heartless discord smote the city.

Boats crashed, autos crashed, trains crashed, airplanes crashed while men and women looked dumbly at controls or leaped in fright! Buildings tumbled, tunnels gave, bridges fell! Explosions came, oil ran, steam geysered, electricity seared and killed, water burst, gas crept—all to man's destruction.

Chaos reigned.

Yet catastrophe lingered a moment on its way. Sections of memory and thought faded slowly. Inhibitions, lost thoughts, strange quirks of mentality cropped out before darkness conquered mentality.

In a restaurant, a man eating pork chops looked at the food, wondered what it was, threw it at the sloppy waiter before him. He did not know why.

Mrs. Rafferty, raising Cain with the butcher boy about delivery, found herself slapping him.

Stewart Hodges, top hat, evening clothes and one shoe missing, felt danger in the ominous glare of his wife. He regarded her with inebriated coyness from the safety beneath the table—as usual. The next moment—dream of years!—he was spanking her.

A truant officer loomed in sight of little Gus Shueller scampering behind an ash can. For the first time in his life, his authority was completely ruffled as little Gus thumbed his nose in glee.

In front of Carillon's, the jewelers, Officer Ryan leaned against a

lamp-post, easing the burden on his corn. He nodded to little Mr. John Smith, punctiliously setting the clock.

Every work-day morning for fifteen years, Mr. Smith had set that clock at just that time. That he would some day smash it to pieces was his fondest secret delusion.

The minion of the law was abruptly startled from a beautiful vision of a land where shoes were unknown to gape at dignified, diminutive Mr. Smith attacking the clock bare-handed.

Thereafter, without any further thought on the matter, Ryan stooped and carefully removed his shoes. A truck ran into an apple cart. He was scared by the truck and ran.

A young truck driver looked boldly into the aristocratic eyes of Elissa Montgomery, wishing he knew such lovely women. Involuntarily, she smiled back. The next moment, instinct coming from the beginning of all time and creation, he was carrying her in wild flight.

In her brownstone house, reminiscent of the early century Mrs. Dwight Vandervoert Cosgrave stepped from her bath. Soon she would address the Ladies' League for Decency of Dress. She thought of implications she would make about morals.

So thinking, she was abruptly shocked to feel a violent desire to parade before her butler in voluptuous nudity.

AT THE CITY HALL, the mayor jabbed a stubby finger into his blotter, glanced at the dapper little gangster familiarly demanding a favor. Sometimes, when indigestion bothered him, he wished he had never left bricklaying for politics.

He had to grant the favor.

Suddenly he felt like killing this unpleasant being.

He did so simply by sticking a stubby finger into the other's throat and holding it there. The mayor then looked at his finger, wondered what it was. Then what the room was. Then what he was. He grew frightened and ran at that devastating question.

On the hundred and fiftieth floor of the International Trust, its president, John Morton, coldly showed Mrs. Ship and her son, Pete, to a door. The estate must be foreclosed. That her grandfather had given his father his start had nothing to do with business.

He glanced at his gold watch. It glinted in the sunlight.

Mrs. Ship suddenly wanted that watch. She grabbed it, ran.

Mr. Morton became enraged. What she had taken, he did not know. But it belonged to him. He chased her and beat her head upon the carpet.

The guard outside felt a small hand holding his. He looked down at a small boy. Within him something stirred. He saw a man beating a woman's head. He did not realize who or what they were. But he felt he must protect the woman. So he did.

Grabbing the banker by the back, he threw him. By chance, he flew through the window. The guard took Mrs. Ship by the hand. They walked away.

Thirty floors below, a clean-cut young man named Sherman faced three wolfish-looking men.

"So you're going to drain the company? Push more worthless stock onto suckers, widows, small business men, and small banks who can't fight you? And I have to try to show profits on all that water!

"All right. I can't stop you. But

some day I'll get the bunch of you for this!"

They smiled. Young blood; he would learn. The smiles froze as they saw him crouch and leap for their throats like an enraged animal.

In the Stock Exchange, Vincent Singe, an unknown upstart, cornered gold. Brokers ran excitedly to the posts of their two strongest leaders.

Shortly, they forgot their worries. Like waves rushing onto a long beach, the growing noise outside penetrated.

Some shrank back and whimpered. Others bolted in fright to other parts of the building and the street. Others went insane. Many became violent and fought.

The two leaders looked curiously at each other. Their eyes lit with fierce animal hatred. Slowly, they crept toward one another. They met. A clumsy fight ensued. The smaller made a discovery. When hit or thrown onto his stomach, it hurt. Perhaps it would hurt the other one if he were hit there.

He concentrated on that. Eventually, he kicked the larger man in the stomach. He lay still. The victor sat down. The other beings crowded around, recognizing him as leader of the entire herd. They were terribly frightened.

FAR UPTOWN, amid the peace and quiet of the college campus, Professor Raymond Hitt discussed world problems with six other professors. They constituted the nucleus of the progressive group at the university.

Professor Hitt paused after a rather comprehensive statement on the ills of constitutional government. He gaped. Professor Hirsch was seriously engrossed in the process of sucking his thumb.

High above Park Avenue, in one

of the city's most lavish apartments, luscious Kiki Randolph finished a hard-voiced tirade to the man before her.

"Loan you back the jewels you gave me? Say, do you think I'm going to support every halfwit who loses his shirt in the market? Get out, Thomas Furrell! You make me sick!"

To emphasize the point, she threw half a grapefruit. As she expected, it landed full on the point of Mr. Furrell's nose. As she did not expect, it came straight back, landing juicily on her eye.

On the street, John Scappella concentrated intensely upon shining the chromium headlights of his taxi. On days off he spent hours shining neighbors' silver for the satisfaction of seeing it sparkle. His other passion in life was tinkering with motors and shiny gadgets. His wife had always been something of an inexplicable mystery to him. She had just happened.

An hour later, he was still shining, perhaps the only being in all New York who continued work after that thing of evil threw its shadow over the earth.

Just off First Avenue, sometimes-employed Coal Heaver Patrick Murphy swept a bundle of soft curves into his arms.

"Don't ye be worryin' about money, me love. Glory be, if ye was in the Saharry Desert, I'd have ye a bath."

The curves nestled closer. Suddenly, Pat dropped his Kitty Murphy. For a moment he looked at her with amazement. Then he gathered her up with brute tenderness and bolted into the street as the crash of two elevated trains reached his ears.

Throughout all the city, such things happened, while hundreds of

thousands, millions of people ran aimlessly in blind fright. Nobody escaped death of memory and habit.

But only three other people interest us.

At the ferry house, eighteen show girls gathered together, counting funds.

"Sixty-two dollars, no change, no breakfast, no clothes, no jobs," breezily commented the leader.

"No men, what's worse," said another. "We've been gone two years. I'll bet every man in this town has a wife and ten kids by now."

"Cut the weeps, sister. We're darned lucky we didn't have to walk back that last thousand miles."

The girls laughed.

"Let's fill up and cry afterward," chirped a small, bright-eyed one. Her laugh was clean and deep. "I'm telling you kids—no more independence at five shows a day and no money for this baby! I'm going to get a man and settle down with hot cakes and babies in a little green house out where the dreams begin! Well, let's eat."

Filing into the ferry-house restaurant, they ordered hot cakes. The first batter spattered onto the iron.

The pert little girl saw the grid-dle man suddenly sit upon the floor and look foolishly at a griddle knife in his hand.

"Oh!" she cried. For she could not remember what the knife was, and she realized it.

Silas Brent, powerful, rich, brainy, representative of vested wealth and traditional government, walked his two police dogs in the park. One moment he stooped over to pet one. His dog suddenly cringed in fear. Brent himself felt some unknown thing upon them.

"Goddard's madness!" he shouted.

The next moment he looked cu-



riously upon his two animals. What were they?—he wondered.

A beautiful young woman sat before a piano playing with extraordinary touch. Seconds before the tempo of the city noise changed noticeably, her finely attuned ears caught cries and the crash of wrecks. She forgot a note. Then she forgot what she was playing.

"Goddard's madness," she, too, said. But softly.

Carefully, as one lets the body of a beloved into the grave, she closed the cover over the keys.

"I'll wait, my mad darling! But don't be too long."

## II.

FEAR THROTTLED all other instincts.

Back and forth on the same streets, around in circles, into flaming buildings like frightened horses, off docks and ramps, out windows, into sewers, subways, and tunnels, hordes ran in frenzied fright until worn out. Dropping in their tracks, some slept, others died, others aroused to continue their aimless flight.

Trains in the Grand Central and Pennsylvania stations smashed barriers, pinning and crushing hundreds. Subways crashed at crowded levels, catapulting thousands to death on searing third rails. Telescoping cars carved people into pieces.

Men ran from wives; mothers left children. Self-preservation ruled.

The giant bridge spanning Manhattan was shaken from its moorings. With a rending crack and sigh of defeated steel, it crashed to lie mangled and tortured over wrenched skeletons of quivering ruins.

Murray Hill burst into a boiling

hell. A giant gas main broke, toppling buildings like toy blocks, tearing streets, ripping water conduits and steam ducts. Great bubbles of steam, shot with flaming gas, boiled through a great wave of water as it tore down hills, a silver and fire-red wave of death.

Cornered, unable to comprehend, guided solely by long-dormant native instinct, terrified mobs streamed back and forth, trampling the weak and unfortunate underfoot in flight.

A few—a very few—craftily hid from terrified crowds, instinctively watched their chance and escaped out of the flaming monster's path.

New York, in a scant few minutes, became a veritable hell on earth, surrounded by sheets of blazing, boiling waters; its area covered by dead, insane, and dying; its streets filled with fires, swept by waves, thundering with wreckage and ghastly sights; its foundations throbbing and trembling to the devastation above.

And man was left to combat the elements, to learn to think, to form new habits. He had to relearn even the simplest functions of the animals. His brain and brawn alone would carry him through—or he would die, go out like a snuffed candle.

BUT AFTER three days, the gods took pity. Fires subsided. Geysers of steam and water became trickles and streams. No more tidal waves swept the island. A kind wind blew gasses, fumes, choking smoke, and dangerous smells of rotting flesh and debris out to sea. Electric-power plants had ceased to operate. There was no more searing current. Catastrophe ended.

One half the human beings who had been alive within the city three days before were dead. A quarter

were hopelessly insane. Hundreds of thousands were maimed and dying.

Of the remainder, none had knowledge or habit or speech.

Man's power and mastery were no more. Alone, he stood amid the wreckage and gruesome horror of his former pride.

The city, the world, civilization, lay smashed.

Yet man himself had wrought this.

This was Goddard's madness. This was rebirth!

### III.

MENTALLY, you moderns are children of Goddard's madness.

You think in results. Our world thought in illusions. Rotten wood was painted and called new.

During the early years of my long sojourn in space, Goddard struggled to make brains and intelligence lead the world. But finally, with the sweeping magnitude with which he thought, he recognized the truth. Progress ran amuck, fettered by habits and traditions of long-dead ages.

The masses were squeezed between big finance, corrupt politics, selfishness, the murderous underworld. War swept the world of happiness.

Goddard perfected a controlled ray which could kill every living thing on the world within an hour. He told this to the world and begged cessation of war—begged that countries turn their wealth toward science and feeding the hungry and solving the problems of disease, archaic legislation, crime, and an out-of-balance economic system.

They could not grasp his dream of a decent world in which every one would be allowed to live more

or less happily. But within twenty-four hours, every nation on the earth made him secret offers of fabulous wealth if he would sell it his controlled ray.

He grew disgusted with humanity. He thought of a new world. His nerves were jaded. Sleep came seldom to him these days. Only those moments when the talented fingers of a beautiful woman brought love and passion and peace from the keys of a piano gave him rest.

Before the Society for Economic, Political, Scientific, Humane, Educational, Moral, and Physical World Betterment, Goddard made one more plea.

Here were the leading brains of every country in the world.

Goddard, the "baby of science," its most brilliant leader, looked over the smug, self-satisfied faces before him. He knew then that his plea was useless.

A hush, vibrant with hopes, fears, jealousies, swept the audience. He was not liked, and he was feared. They knew his power.

He began to speak.

"Of talk and plans, of brains and purpose, we have more than the Council of Solomon. Of accomplishment—we have nothing. The world is killing itself.

"What good are brains and research and scientific progress if they accomplish nothing more than to swell their own importance and create wealth for a few and misery for millions?"

Coldly, he weighed facts. Science had accomplished miracles. Two million workers, with planned production and power, could supply the world, not alone with necessities, but with every conceivable luxury. Their output could give to every man and woman the finest houses, automobiles, airplanes, television,

clothes, food, heat, good air, time, and leisure.

What was the case? A bare twenty million people on the face of the globe had such things. Poverty, disease, starvation, unemployment, crime, and war robbed civilization of its fruits. Amid the greatest luxury and knowledge of all time, man was eaten by the cancer of slavery and bondage, a slave unto the machine which he had created.

"Fourteen wars consume the flower of youth throughout the world to-day!" he cried to the smug faces. "*Fourteen wars, with millions fighting! I, a single individual, could annihilate those nations before to-morrow morning!*"

"Nations are governed, not by the people or by honor, but by half-witted—and I use the word advisedly—politicians and crooks and leeches.

"Sickness, malnutrition, starvation amid a wealth of plenty; industrial diseases and wave after wave of crime sweep the globe. Here in this country, within twenty-four hours, there have been a hundred mercenary killings, four lynchings, hundreds of deaths from starvation.

"Yet we know what is right! We do not believe conditions must go on until evil consumes all good! We *can* combat war and pestilence and disease and waste and dishonor! But we *won't!* Knowing what is wrong, we do nothing about it!

"And why not?

"Traditions! Habits! Fear of change!"

Goddard stood erect, lost in the desolate vision.

A chair scraped. Silas Brent, seventy-five-year-old autocrat, powerful in world affairs, belligerent, representative of vested wealth, rose on the floor.

"TRADITIONS made this country what it is to-day, Goddard!"

"So what?" Sparks flew from Goddard's words. "Some of us bathe in onyx bathtubs, while others—not slaves, but free men—watch little ones swell and twist and turn blue and die for want of a bottle of medicine!"

"What then?" Brent snapped. "Are brains worthless? You give a picture of a world going through dissolution. Yet you admit that knowledge is superior to any previous time in history. You blame us, I think, for not finding a solution. Have you one?"

Goddard took a deep breath. He was prepared, if it was necessary. His eyes gleamed with the determination of the pioneer.

"Yes! Brains *will* win. But they need a vacation; a complete break-off from the deceits and rutted traditions that smother the use of intelligence."

Brent smiled with easy assurance. For many decades he had listened to the rantings of youth.

"You, perhaps, young man, have found a way? Is it legislation?" Father of more than two thousand laws, he smiled at his own quip.

Goddard glowered.

"Wealth and power can find time to be amused while millions suffer from unnecessary starvation and disease! Brent, it is my promise that within two months you will be competing for a living with coal heavers!"

For the first time, the cocksure old man lost his composure.

"Is that a personal threat? Goddard, you are not fool enough as to threaten revolution!"

"The most devastating and far-flung revolution the world has ever known!" the scientist whipped back. "A revolution from which none of

you will escape! A revolution which could have been avoided if you had used your brains! *You will not! You're worse than ignorant! You're fools!*"

An astounded murmur of resentment ran through the stadium. Goddard, the clear thinker, the forceful, the genius, screaming like a soap-box orator! There were cries of "Throw him out!" The whole assemblage came to its feet.

Eric Petersen, brilliant young dean of philosophers, leaped to the speaker's dais.

"Hear, hear!" he shouted. "Goddard speaks the truth! You people know him!"

He gazed out at the excited mob, shrugged his shoulders hopelessly. Nobody listened to him. Across his mind flashed a statement of Goddard's from the opening meeting, ten long years before.

*"We have brains," the young man had said then. "We don't use them. Unless we begin to, the forces of evil will go beyond us."*

Petersen looked around dejectedly for Goddard. There was an ugly quality to the crowd's murmur. A riot squad had already begun to clear the stadium.

Goddard was gone.

"The prophet spoke and they would not listen. Goddard is now liable to play at being a god." Petersen pondered the meaning behind the short talk. They should have let the speaker finish.

Long after he walked slowly from the nearly deserted stadium. He was tired from thinking too much. A newsboy hawked the last edition.

"Goddard's Madness!" screamed the headlines.

NEWSPAPERS shouted Goddard's threat. Editors, economists, world leaders, politicians, famous

preachers took sides. His sanity was questioned. What did he mean? Platitudes or actualities?

In Washington, a special cabinet meeting was called.

"He's gone loco," said one secretary.

"The trouble is, he may not have," said another.

"There's still the army," said a third.

"Goddard's his own army. He invented the gas that forced the nations to agree to our reduced armament terms last year. He laughed when he gave it to the war department. 'That's a child's plaything,' he said. He told General Hawley that the next world war would be fought by not more than a thousand men. He's dangerous."

The governor telephoned Goddard. They were old friends.

"When I was young, I used to dream about what somebody would do some day with science," the old man said. "I don't think you're crazy, Goddard, my boy. I wish I could say that in the name of the people. I can't give you *their* faith. But I give you my own. I hope this won't be too devastating—whatever it is!"

"I hope not," the scientist replied. "It's better than what we're coming to by pig-headedness. The sin will rest on my head."

Silence. Then:

"I don't sanction your arrest, my boy. But Brent thinks you're dangerous. You may find yourself put under observation for insanity until this blows over."

Another pause.

"I don't suppose you'd tell me a little more fully— No; never mind. I'd rather not know. Good luck." The line clicked.

Goddard smiled to himself.

"So Brent's out to get me!"

A moment later his doorbell rang, and the figure of Eric Petersen, wild and disheveled, catapulted into him.

"Thank the Lord!" he gasped breathlessly. "Hurry! Brent's on his way here!"

Goddard found himself being dragged out through the lobby and into a high-powered car with drawn curtains. Petersen banged the door, and the car leaped forward.

As they pulled away, Goddard looked back. Two heavy police cars, an ambulance from the insane asylum, and another car from which Brent alighted stopped in front of his house.

Goddard chuckled.

"Wanted to be in on the kill himself, hey? Wonder how he'll meet life under changed circumstances?"

He looked over at Petersen. "Headed where?"

"Airport. You can take my plane. It makes six hundred and is fueled for thirty-six hours. Only, get out of town! It will be tuned up when we get there."

He turned to look Goddard full in the face. His own face relaxed.

"Have to confess, my friend, that I was a little afraid," he said. "But I see you're perfectly sane. At least, as sane as you ever have been!"

"What are you going to do?" he went on. "I got the drift. But the details are beyond me."

Goddard considered a moment.

"Eric, it's so sweeping in magnitude that I hesitate on the brink."

"Don't be a jackass! Whatever it is, it can't make matters worse. Hesitation is what's wrong with the world to-day. By the time we get ready to jump, the tide's gone out, and we break an ankle on the rocks."

"I am thinking of annihilating the world's memory and habits."

A muffled sound from Petersen. Then silence. After a few minutes:

"It rather takes the wind out of one. Return the world to aboriginal state?"

"That's the hitch," Goddard said slowly. "My theory is that with all the tools of civilization and progress prepared, and with highly developed intelligence, man will relearn from the beginning in almost no time. He'll learn so rapidly that he won't have time to pick up all of the rottenness and warped thinking and habits he is suffering from now."

"Sounds good."

"Yes. It *sounds* good——"

Petersen drew his car up at the airport.

"Good luck, Goddard. It's insane and magnificent. I wish I were going with you."

Goddard looked into the very human and very wise eyes of the not-quite-so-young man beside him.

"Do you suppose," he inquired with grave seriousness, "that insanity is the price of intelligence?"

Petersen smiled.

"In your case, I think it is the opposite."

"You think I'm insane?"

"Positively."

"Do you want to go—really?"

"I have never had the pleasure before of such complete equality! Yes! Goddard, to-morrow's world will either bless you or curse you into immortality."

Rapidly the two walked across to the waiting plane. Up, up, up, and northward they soared. Northward to a hidden laboratory far in the wilds of Canada. Faster and faster, the hum of the giant motors beating back æons and æons of traditions and human feeling.

#### IV.

JUST ONCE during that fast flight northward was the hum of the



motors broken. Petersen looked closely at his friend.

"Shouldn't we take Marion?"

Goddard's face was set and white.

"Love is a matter of habit," was the brief answer.

"I disagree with you," said Petersen. Then he was silent with understanding. For he realized Goddard was making the supreme sacrifice, that only by so doing could he bring himself to heap such suffering upon the world.

Haste marked the next two months. From before light in the morning through long hours far into the night, the two men worked. Long before, Goddard had brought all necessary equipment and stores to this distant hideout, but there was much to do. Petersen busied himself writing memoirs of the civilization they were leaving, jotting down bits of information and data that would be helpful to the future—that would help them to regain culture should they ever be able to read again.

Goddard had his equipment to tune up, and much intricate apparatus and many dangerous chemicals to hide so that two men, with only instinct and curiosity left to them, would not kill themselves during the years of relearning. Beneath the laboratory was an elaborate series of vaults in which books and chemicals, guns, electrical apparatus, and machines were placed in a special order so that they would be found and used only as the mentality of the two was capable of discovering their right use.

Thus, the first vault, with comparatively easy access, was stored with foods and knives and axes and simple devices such as blocks and pulleys and ropes and matches and clothing. The next vault could not be entered until its combination, let-

tered in hieroglyphics above the tumblers, had been deciphered. Here were stored books that would teach them how to read. Simple books, with pictures and large block letters such as very young children use. And beyond that, books of simple instruction for such things as the use of oil lamps. Beyond that, the lamps themselves. And farther back, guns and ammunition with both pictured and written instructions. And still farther back, a simple talking-movie machine with stored energy, and film sealed in so that it could not be damaged. This, if the men lived, would teach them to speak, teach them the use of words. From that point on, their relearning would be merely a matter of time.

There was little personal conversation. Both felt instinctive fear of what they were going to do, buoyed their spirits with a pretended indifference to fate which neither of them quite felt.

On the day before the two-month period ended, Goddard called Petersen into his laboratory.

"This is the diabolical machine," he said.

He pointed toward a panel beside which were many rows of tubes and coils. Petersen was impressed with its simplicity. Goddard touched a switch.

There was a low buzz. The tubes took on a purplish glow.

"That's all there is to it. The tubes generate mirgroid waves. They travel over the earth, make a network, spread out into a complete shield.

"These mirgroids come into contact with blue rays and follow them to their source," he continued. "The only source is the human brain. When they arrive, the shock is so severe and so definitely peculiar to

the nervous system that it annihilates memory. Memory gone, so is habit. But, remember, that has no effect on intelligence.

"For instance, if your intelligence has been highly developed for a number of years, and expanded accordingly, you will still have that highly developed quality. You may starve along with the rest for a while, but eventually you will learn to take advantage of your surroundings. And you will relearn quicker than the man without intelligence."

Goddard paused and looked searchingly at his friend.

He said slowly:

"Eric, of all the men I know, you are the one best equipped to watch this experiment. I could give you a protective net of cosmic rays if you want to stay on."

"And be the only civilized person?" the other laughed. "No, thanks!"

GODDARD smiled tiredly, his eyes bearing witness to his emotional exhaustion. He was thinking of a beautiful woman and the strains of restful music.

"It will be pretty terrible. Some—those in whom native instinct has been lessened, may not know how to drink and walk."

"Buck up!" Petersen said. "Think of the world as it is to-day, with blind stupidity leading millions of defenseless people to destruction—crime and insanity and selfishness blighting the lands—the shirking of responsibility!"

"Think of Brent, perhaps one of the finest minds in the world, a man who takes responsibility seriously, floundering and misleading the nation in a bog of tradition which cannot exist side by side with modern scientific achievement!"

Goddard straightened. The cold light of science flamed in his eyes.

"After all, we'll be among the first to go," he said.

Eric smiled.

"We'll probably fight to the death over a bone while the storeroom is filled with canned goods!"

He turned to tune in a New York station on the radio. A voice came forth:

"—one more day and Goddard's threat will be proven to be—just Goddard's madness," the voice droned.

New York had forgotten its scare. The idea of such a revolution as Goddard planned had occurred to only a handful of people. In the city, on the eve of that sweeping experiment, only two people gave really serious thought to the possibility.

One, the girl Marion, bringing dreams out of a piano, knew what would happen, and smiled wistfully with great love and faith.

The other, Brent, felt the lash of defeat for the first time in his life. He did not fear the unknown. He gave only a passing thought to the fact that Goddard's words probably meant a revolution by electronics.

But suddenly he had a great fear that his life had been useless, that he, and others like him, had bungled the world's business.

"This revolution, if it comes about, is the greatest evidence of that," he told a friend.

"The man's mad," his friend said.

"Mad? Of course he's mad! Everybody who does anything is mad! What has that got to do with it?" demanded Brent with heat.

In his mind, he made a confession to himself.

He would like the opportunity to make amends, to relive the past thirty years.

THE NIGHT passed. Morning came. New York began its work day.

Far away, Goddard and Petersen went on a last inspection tour. Their plane was safely locked away. All electricity had been dissipated, all valuables and dangerous objects stored within the safe.

Petersen grinned.

"Here's a problem to consider: I claim that a banker takes advantage of his surroundings by instinct. Which will win: instinct or intelligence?"

Goddard's youthful, vital laugh returned.

"You can't beat the bankers. But their instinct is for acquisition. They're liable to starve to death while hoarding stones." He smiled at the possibility.

There was a quick look of faith and friendship and understanding. Goddard pulled a switch. The two friends looked at each other curiously, feeling the first impressions of their new life.

*They did not know each other, nor did they know anything else.*

Up, out, far over land and sea, circling the world and cloaking it in a mantle of invisible destiny, sped impulses of mirgroid waves.

## V.

*CIVILIZATION lay smashed. Knowledge, its backbone, was gone.*

*History had not ended. But new history had begun.*

*One moment, man knew. The next, he knew nothing. The world he had never seen before. He must relearn how to live. For the moment, all men were equal.*

Silas Brent's first sensation was slow surprise. A strange object touched a part of him he did not know existed. It made a sound he

had never heard. He noticed there were two such things and that they were attached to him. Instinctively, he knew they were not part of him.

He heard loud, dreadfully frightening noises. For a time he crouched. But, as no harm came to him, he returned to examining himself and the two things.

They had points in common with himself, yet were different. They were alive. He felt the difference between the things and the ground. Thus came the first realization that he was a being and that there were other beings. But not like himself. And that there were things without life.

He found the things attached to him by things that moved on his wrist. The things slipped off. He decided to put them back the way he had discovered them. This took many attempts and quite a few minutes of deliberation. He had his first creative thought. Everything could not simply be another "thing." He must begin to classify things as he noticed them.

If he could have thought with knowledge, he would have known that the two things something like himself were dogs. The two things that held them were leashes. But he had no way of knowing that. The leashes were part of the dogs, so far as he could see.

His throat itched. He coughed. This surprised him. He experimented, found he could cough and grunt at will. He accepted the fact without wonder.

Men and women appeared, running and shrieking hysterically. So there were other things just like himself? They could make noises? He tried screaming. He was not very successful. He wondered if the loud noises from outside the park were made by things like himself.

He saw trees of varying height and acquired a sense of size. He wondered if the noise was made by things like himself, only very much larger.

He examined the trees closely. So did his dogs. Their actions were interesting. The dogs seemed to know all about these strange things. He must watch them carefully, learn what they knew. He saw grass and dirt and rock and examined each one closely.

The dogs barked. More things like himself appeared. Brent grunted, felt pride in the noise. They paid no attention and sped onward. They were running, and he experimented with the movement. Eventually he tripped over the leashes and banged his elbow. That was pain. The dogs came and licked him. It was pleasant. For the rest of the day he sat where he had fallen, thinking over his astounding discoveries. Memory had taken root in his mind again.

He was most puzzled that the dogs seemed to know all about things. They knew when to be afraid and when to be alarmed. They didn't like the other things that resembled himself.

Finally, Brent put puzzlement aside. He must learn, so that he would not be puzzled.

In the afternoon, a thunderous explosion shook the ground and frightened him. The dogs clung closely against him. They shivered and growled. The fear passed, and he thought about it. The dogs were scared by the same things he was. When he was scared, it was comforting to have the dogs near by. They must always be close together when they were frightened.

He grew thirsty, but had no way of recognizing the fact. He got up and started walking. The dogs

pulled toward the center of the park. Soon they came to a fountain. The dogs drank.

Brent watched the dogs lap water. He followed their example. It relieved his thirst. Then he noticed that the little pool came from the fountain. He tried licking the water that was jetting up. With some choking, he learned to swallow properly.

He wanted to explore in that far region where flames and smoke and exciting noises were. But instinct told him that there lurked danger. So he did not go.

Finding a cave, he crawled inside and lay down with the dogs beside him. He wondered what led him into that cave. Then he realized that he had two sets of feelings. One, instinct, was just there to begin with. The other was what he learned by experience—memory.

MRS. COSGRAVE found herself very frightened, and crouching. She was in a hotel lobby, but she did not know that nor how she had come there. She was nude.

After a long time she was not so scared. The noise grew worse. But no harm came to her. She discovered not far from her two beings like herself. Earlier, they had been Mr. and Mrs. Pat Murphy.

The three watched each other. Then Mrs. Cosgrave crawled to where they were crouched with arms locked about each other. She touched the man. He grunted. She pushed his cheeks and felt his hair and neck. Then she felt her own. They were something alike.

He was covered with something that she felt was not part of him. At least, not like his hair. Curious, she placed her hand beneath his shirt. A tingle of pleasure shot through her. The feel of his well-

muscled chest was nice. She sat there patting it.

The other one watched her.

Now, at one time Mrs. Cosgrave had been toasted as the most beautiful belle of New York. And as she stroked his chest, Pat felt new feelings in himself. He forgot fear. He forgot the other woman. He pulled the new woman to him. She was warm, and it was pleasant to hold her.

He did not recognize the mating instinct. Vaguely, his other woman did. She sat hunched up, watching.

Two men ran through the lobby. One had something in his hand, and he hit the other. The other fell. Blood gushed from his head. The victor dropped the thing, ran on.

The woman looked back at her man, noted the expression in his eyes. It meant nothing to her consciously. But unconsciously there was instinctive recognition. The strange woman was cuddled against her man.

Pat's woman went over to the fallen man, picked up the thing—it was a wooden mallet—walked over, and hit Mrs. Cosgrave as the man had done. She slumped and moaned.

Instinctively, Pat turned to strike. Then he saw the woman he had found himself with when life began anew that morning. There was something about her— Some deep, unknown feeling told him *this* was his woman.

But why not both? He swung the other's limp body up, took his woman by the hand, and walked. Instinctively, he looked for a hiding place. But he did not *know* what he was doing.

Eventually, he found the kitchen. Here he dropped the woman, for his nose discovered interesting smells and something drew him to investigate.

AT THE ferryhouse, the pert little chorus girl felt one immediate instinct with her new consciousness. She was hungry. Jumping the counter, she went to the griddle iron.

The first cakes were finishing. Reaching for one, she was burned. She was surprised, frightened, and interested. Putting her hand near the iron, she felt heat. She touched it, was burned again. She learned that one cannot touch hot things.

But she wanted what was on that iron. She touched a knife. It was cool and did not burn. She found how to push a cake off the iron with it. Several times she burned her mouth on the cake. After her second cake she had learned not to eat things that were hot, either.

Other things like herself crowded about. She accepted them as a calf accepts its herd. They watched her and learned. Once she bit a girl's ear for trying to take cake out of her hand.

Somebody overturned the pitcher of batter. It spread out, became a huge cake. The girls tasted raw batter. It was not as tasty as the cooked cakes.

The little chorus girl wondered what batter was. She investigated some strange-swelling thing near by. It did not taste exactly like the batter or the cakes. But it was the same thing, her taste told her. Somebody grabbed it away. Part of it went into a glass of water. It turned to batter, and the girl tried it on the iron. It came out a griddle cake. Her second attempt was better. She had stirred the batter with a finger.

She saw two things something like herself smelling around, eating scraps and batter. Once they had been counter-men. She knew the batter was not so good as the cakes.



So she threw them pieces of cake. They made noises and attached themselves to her like thankful puppies.

Later, she felt thirsty. She investigated liquids instinctively. Not all tasted the same. The clear, transparent fluid tasted best. Wetting fingers, she licked them. She thought of licking a glass. She stumbled across drinking from a glass by accident.

Once a wild-eyed thing ran in and hid behind a counter. It looked like the things she had fed. He growled at them, and something told her that here was danger. Already she had cut herself on a knife. She thought about that. Stealthily, she grasped a knife and crept up behind the strange unknown. She hacked at him furiously. For a moment he howled and fought back. Then he turned and ran.

One of the things like herself drank dish water. Others followed. It made them deathly ill, and for hours they were too sick to notice the terrible noises and frightening flames in the outside world.

## VI.

ON THE second day of new life, Pat learned to use his nose. But he learned, choking on an appetizingly smelly piece of tin, that not everything that smells good is edible. He and his women stuffed gloriously on rolls, butter, pickles, many delicacies and vegetables which had been left on the stove. He found some bread in a box and kept it.

His throat ached dully. No accident made him taste liquid, and the instinct did not assert itself.

Strangers ran into the kitchen several times. Pat growled and drove them away from his property.

He found a window knocked out, and looked forth. Overhead, the sky was heavy with clouds of fearful colors. But not far away was a place that was green and interesting. He crawled through the window. His women came after.

A jut of broken glass tore Mrs. Cosgrave's side. She whimpered. Pat saw the trickle of blood and wondered. He became conscious that she was not like him and his other woman. He wondered if the other woman was like this one beneath the queer things that he knew were not part of her, like her flesh.

He ripped those things away. The women were much alike. The younger woman shivered. She had not felt cold before. She gathered together the torn clothing, tried to put it back on. She found her arm through an armhole. The clothes stayed on fairly well after that.

Pat thought of food. Going back, he fetched a box of bread. This was the first conscious act of precaution. He led his women slinking toward the green. Frightened things like himself passed, made strange noises, scampered away. Pat realized he was larger than most of them. Instinctively, he felt he would like to fight with some of those he saw. But explosions from downtown frightened him too often to stop.

Now, this part of the city was luckiest. There was the broad expanse of park. No chemical factories or warehouses were near by. The center of population and devastation was far away. Fires, floods, explosions, the havoc of wildly careening, smashing traffic had been less here than elsewhere. The air was better. They were safer.

Pat made his way into the park. The trip was fearful and exciting. He passed several corpses and instinctively knew they were dead.

Once, with a single blow, he killed a crazy thing that attacked them. He felt proud of that and strutted a little in front of his women.

A strange noise frightened them. It came from two queer, frightening things. But there was a being like himself with them. He feared them. But the man just looked at him and stood still. Pat crouched and looked back. The pain in his throat was getting unbearable. He licked his lips.

The other being was Silas Brent, capitalist.

After a time Brent grew thirsty and licked his own lips. That was what this other being had done! Perhaps he was thirsty, too. Brent decided to take him to water. Then he looked at his dogs. They were straining at their leashes. They did not like strangers. But he did. He was lonely.

He thought of his cave. Supposing somebody possessed it while he was gone? Then he remembered that the dogs' leashes slipped off. He thought about that. He knew now that the leashes held the dogs. Outside the cave he put the loops of the leashes over a knotted stump. It held the dogs. He walked toward the stranger.

Pat growled. Brent paused and looked at the man closely. He examined the women, particularly the nude Mrs. Cosgrave. These were the first women he had seen.

Advancing closer, he touched the man. Pat sensed friendship. He grunted, touched Brent back. Brent headed in the direction of the fountain. He looked back after a few steps. The man was standing watching him. He made noises. The man did not understand. Finally, he had to lead the man.

At the fountain, Brent drank. The man watched, puzzled. When he

tried drinking, water trickled down his chin, but his throat ceased aching.

Mrs. Cosgrave had watched Brent carefully. She stooped and drank from the fountain immediately. Pat's woman did not understand so well. She choked several times in learning to drink.

THEY RETURNED to the cave and sat down. Pat liked the man. Suddenly he thought of the bread. He reached in the box and handed his new friend a loaf. Brent examined it closely but did not know what to do with it. One of the dogs grabbed it, ripped it to pieces, and ate. Brent grabbed up a piece and ate, also. It was good and appeased his hunger.

Mrs. Cosgrave saw that Brent had two dogs while Pat had only bread which he had found. She was curious about Brent. Instinctively, she felt him a leader. She crawled over and touched him. Pat watched. When she cuddled against Brent, he reached out a strong hand and knocked her back. Brent was interested. Why had the man hit her? He thought of what he would do. But he could not guess, because he had never owned a woman. He would like to own one.

Pat regarded the dogs closely. Brent struggled to make signs of expression. He found it impossible. He took one of the dogs by its leash, placed the leash over Pat's wrist. Then he took Mrs. Cosgrave's hand and led her to his corner.

Slowly, Pat got the idea. This other being wanted the woman. He would give a dog for her. He considered the trade. Why not? He had two women. He had no dog. Dogs must be more valuable than women, for he had seen many women and no dogs on the streets.

He smiled, grunted, and nodded. It was the first trade and first sign language of the new life. Brent noted the nod and grunt. He classified them as signs of acceptance.

At dusk, Brent grew thirsty again. He tried the new language. He licked his lips and looked at Pat. Pat grunted and nodded. Each took his dog.

Returning, the dogs growled and pulled off in a different direction. The two men followed. They found the truck driver and the society girl huddled together where they had dropped from exhaustion the previous day. They were sick from thirst, hunger, and cold.

Brent squatted and watched them. He had learned that by watching and thinking about things he could learn much. Instinctively, he knew that they were sick. He saw the girl lick her lips faintly. They were thirsty!

He touched the man. He wanted him to follow to water. But the man was too weak to get up. Brent puzzled. He remembered that the bread had been carried in a thing. If it held bread, perhaps it would hold water. He got the box and filled it with water. It leaked, but not badly. He carried it to the strangers and put it under their faces.

They did not know what to do. He drank from the box himself. The girl caught the idea first. Sputtering, she licked water out of the box. The man watched and did the same.

Some strength returned. Brent led them to the cave. Pat ate bread. His dog snatched a loaf away. He hit the dog. Then it occurred to him that the dog must eat. It was now his dog, so it must eat well. He gave the dog another loaf.

He looked at his friend and the strangers and his women. They

watched but did not dare touch his property. He handed each a loaf. The girl copied his eating movements and choked on a piece of bread. She learned that she must chew her food. Her man had no trouble with eating.

Mrs. Cosgrave waited until all were asleep, then crept over and cuddled next to Pat. He awakened and knew who it was.

Then he remembered his dog. He had given this woman for a good dog. The dog was a prized possession. The man who had given him this good bargain had given him water, too. He was a friend. Abruptly, he grunted and smacked the woman. She whimpered. He shoved her roughly in the direction of Brent. She crawled back to the side of her new lord and went to sleep.

EARLY THE NEXT morning the little tribe awakened and stretched. The cold cave had left bodies stiff. Pat was thinking of this and remembering his warm kitchen when a strange being, barefooted, appeared in the entrance.

It was ex-officer Ryan. He was carrying two other feet.

Pat leaped up to drive off the intruder. Then, remembering it was Brent's cave, he waited to see what the older man would do.

Brent saw something an exciting color on Ryan's coat. Twinkling in the filtering light, it gripped his imagination. He wanted it. He drew the stranger inside.

For a long time, Brent could not draw his eyes away from that shining spot that looked like a little piece of sun. It must be valuable because nobody else had one. He wondered if the man would trade it for the woman.

With much the same motions he

had used to trade his dog, Brent now offered to barter with Ryan. The little tribe watched closely. Mrs. Cosgrave hoped the new man would trade. He looked nice and warm like Pat. He had a nice smell, too.

Brent repeated the gestures many times. Finally, he ripped the spot off Ryan and put Mrs. Cosgrave's hand in his. The policeman understood. He smiled and nodded. The method of bartering, the smile and the nod, were now firmly established in the minds of all.

Brent spent some time admiring his new possession. "Then he remembered food." He made signs of eating. The bread box was empty, and Pat remembered where he had found food. After drinking, he led the little troupe back across the park. Brent was awed at sight of the strange-looking rocks with so many regular holes in them.

For several hours they roamed back and forth in front of apartment houses. Occasionally they stopped to investigate dead bodies, overturned autos, a bus.

Pat found a strange thing. It was small and shiny and cold. But it must be a face, for it had two eyes and a mouth and a nose. Its tongue stuck out of its mouth. Pat pushed the tongue in, and the face made a peculiar noise that scared him. Then he looked in the palm of his hand, and there was the tongue, very round and shiny. The face made no more noises.

He kept the cold, dead face. It was a dime collector.

They were still looking for the cave with the food that he had left when the dogs tugged violently into a strange cave. Their tails wagged and they sat in front of little caves, waiting. Brent wondered what the dogs were after. His little tribe

grew nervous, and to hold them he held the policeman's gold shield, for such it was, up for inspection. His courage and leadership were recognized, and the shield became the emblem of power.

For several hours they stood before the little caves. Finally, Brent's dog pulled to a strange, closed hole and pawed it open. It climbed many rocks, pulling him behind. Then it nosed another closed hole and ran down a dark cave.

The dogs jumped at still another closed hole. This one did not open. Brent could not open it. Then he tried to throw his weight against the door as the dogs were doing. He knocked himself down.

Pat did not understand why Brent had jumped at the place. But he applied his brawn. There was a rending sound. The door gave at his next onslaught, sending him rolling into a nice-smelling cave. His dog's leash broke, releasing the dog, who ran familiarly through the caves. Once, long before when the elevators were not running, the dogs had made two trips up and down that stairway. The apartment they knew well. It had been Brent's.

The group followed to find a four-story, thirty-six-room apartment. It was warm and comfortable. They spent the remainder of the day in exploration.

They found fruit and many things to eat. The young truck driver ate artificial fruit and got very sick. Pat discovered coins. After much experiment, he made one go into his dime collector the right way and ring the bell. It was a big achievement, and he was properly admired when he made a second one ring the bell.

This act set the precedent of experiment.

Once, the dogs set up a wailing.



*The strange creatures had no fear! With a grunt, Pat swept his sword up to decapitate the nearest one.*

Brent and Pat investigated and found a dead body. It was the butler, who had died from fright. The body was decomposing. Instinctively, Brent felt danger in it. He tried to lift it, found it too heavy. Pat lifted it; waited for directions. Brent looked out a window and signed at the ground far below.

Pat gazed at the street, the body in his arms. A figure ran below. He was seized with a childish wonder to see if he could hit the figure with the body. Instinctively, he dropped it before the figure came directly beneath. The body landed on the figure, killing it.

He clapped his hands with delight. Brent felt a high regard for Pat. In the same day he had made strange noise come from a strange face, had broken through an unbreakable place, and hit a moving object.

## VII.

EXCITEMENT filled the following weeks—so important in the nation's new history.

There was the excitement of mere living, the paradox of savagery amid the greatest luxury civilization could provide. So much there was to learn and explore. And the pride of discovery and showing others!

There was the mysterious cold cave providing numerous tasty bits. And making the clan violently ill on the fifth day, when electricity had long since ended and refrigeration ceased.

The delicious comfort of curling up on soft carpets beneath warm beds for the night—of learning to take feet off, taught by Ryan, and tucking feet within the feet deep into downy pillows—of pulling huge cushions off the chairs and sitting upon them on the floor—of dividing

the loot of Brent's clothes, found in closets—the mystery of getting onto the right floor, ended by Ryan, who established a shrub on the landing as guide—throwing refuse out the window at passing creatures after Pat's instincts warned that it bred danger—early morning digging for worms, a delicacy owed to the habits of some late fall birds—the mystery in the great wind that blew the sky clear of fumes and clouds—and the tremendous discovery that beds *were made to sleep in!*

That almost brought havoc into the clan. For Brent had found and liked his own former bed, most comfortable in the house. And the truck driver laid claim to it by right of occupancy one night. Brent had been unable to oust him; his authority was challenged.

Pat saved the day by walloping the tar out of the usurper. Unconsciously, he established the foundation for the clan with Brent as chief and himself as captain.

The dogs taught the clan hygiene. Under pain of exile, the clan accompanied the dogs for two daily walks in the park after Brent and Pat discerned certain dangerous smells and traced their origin.

Too, the dogs discovered a miraculous spring in the White Room that sprang forth when a shiny thing was turned and stopped when it was turned the other way.

There was the big cave that ran straight up, nobody knew how far. Pat had been stuck in it for hours, finally to fall down choking with black dirt. And the terrifying water people that looked exactly like others in the clan. But Mrs. Cosgrave, with elaborate experiment, had proven that the strange, upright pieces of hard water reflected one's own image. She, too, had discovered the use of combs.



RYAN, the barefooted ex-police-man, made a great discovery, shown in secret to Pat and Brent and earning him the post of keeper of the cupboards. For an intriguing thing with a many-colored outside had fallen off a high place onto a radiator and split. Delectable smells and meat oozed forth. Other such things with different colors held different foods, and there were many of them.

Once, the young truck driver's woman had stolen into the forbidden storeroom. Caught by Pat, she had been thoroughly chastised. He now took upon himself the duties of policeman, judge, and establisher of law.

There were minor casualties. Shining knives and broken glass had taken toll. Pat's wife had conceived the idea of throwing glass out the window after her tenth cut. The use of the broom was her contribution to civilization.

She it was who originated the game of throwing books out those same windows. But Brent had decided that nothing should be destroyed until its use was learned. Cherished because of this were four broken crocks, some candles, and a *vase de nuit*, later to become the Royal Goblet.

There was the first case of hero worship when the truck driver discovered sex. Amid great awe, instinctively according it a reverence they did not accord the mere act of walking, for instance, the clan was initiated into the deep mystery. He and his woman were awarded a can of meat apiece for this discovery.

Pat found the dogs would come from a distance if grunted at loudly enough. And this was lucky, for he had removed their collars and did not know how to place them back on. It was no longer safe to

go to the park without them. Great beasts, like the dogs, but larger, roamed there and growled fiercely.

Toward the end of the month, one of them attacked the clan. Its roars were bloodcurdling. After a bitter fight, covered with blood and foam, the dogs conquered the strange thing. With lusty growls, they ripped great chunks of its flesh and ate.

Pat tried the warm flesh and found it good. It was the first fresh meat the clan had tasted.

A peculiar human was found starving in a strange cave in the park. He fought the clan bitterly, finally was killed by Ryan. In the cave were great stacks of shiny things which he had gathered. Once he had been a big banker. His hoardings were cigarette covers.

There were many minor fights with small clans like themselves. At first, they killed if their adversaries did not turn in flight. It was Brent who decided they must capture.

But it was not in battle that the clan took on early additions. Its first new member was a beautiful woman who came upon it one day at drink, instinctively placing herself under Brent's protection. She gave to him her only possession, a roll of soiled music. On one sheet was written the name "William Goddard." But none could read.

THE NEXT additions caused more of a stir. Seven oddly attired individuals, who jabbered strange sounds, followed the clan home one morning. The leader, a thin little man with cuts and sores showing through rips in tattered clothing, had once been the celebrated Professor Hitt. About his neck he wore an antique petticoat from an early eighteenth-century collection.

Second in command was Profes-

sor Hirsch. He had lost his trousers and wore a petticoat about his waist. One of their continued arguments in later months was to be whether a skirt should be worn about shoulders or waist. The entire party suffered from starvation and exposure.

All were weighted with treasure.

There was a bag full of round objects with holes in the middle and shining things on the sides. It had been of the world's most valuable collections of precious-stone rings. Brent thought the objects interesting but not very valuable.

There was something flat which made interesting sounds when closed. It opened mysteriously when its stomach was pressed. Inside it had rows of shiny gray teeth. It was a set of draftsman's pens.

There was a case of many objects like water, but almost round. Pat thought it might be water fruit and bit one. With a loud pop and a tinkle, it crumbled, cutting his lip. His woman noticed the things were just like the things growing on the little trees on the tables in the house.

In later years, some of these were planted in the spring. But no light-bulb trees ever grew.

There were a dozen long, shiny objects which sprouted one piece of the water fruit from their top. They had little noses on their sides. When the noses were pressed, they shot forth sunshine. They made the dark like day. Quickly, Brent recognized their value and forbade their use without his permission. These little suns might set.

There were long sticks with heavy knives on the end of two and a shallow box on three. Their use was immediately determined, and they were prized far beyond the rings. Axes and shovels were needed in the new civilization.

Then there was the startling discovery that one professor had found a use for the bags in his skin that yet was not part of him. The use of pockets made countless tasks easier.

The professors were all severely chastised once. That was the first day. After that, they were house-broken.

The next group encountered frightened Brent's little clan almost as much as it was frightened. There were about twenty beings of both sexes, and they were come upon unexpectedly as they huddled about the fountain.

Truly they were a terrifying sight, covered with blazing colors that looked like fire and clouds and glittered in the sun. Once, the attire had clothed opera stars.

Only one of the group won respect. He possessed a weird instrument that made uncanny noise when blown upon and that filled the clan with terror. He could not play the same tune twice. But nobody else could play it at all.

In his soul, Pat felt it to be a thing of evil. But its evil might be turned against the enemy sometime. The man was allowed to keep it.

Foresight was taking root.

Once, weeks before when things had names, it had been called a bagpipe.

The newcomers had only one helpful quality. Their sign language was more rapid and comprehensive. Too, they had a clearly defined use for nine different grunts while Brent's clan used all grunts for only three meanings.

## VIII.

WINTER, delayed by a kind Providence, now pinched faces blue. Windows broken, the house was

damp. Fire had not been discovered. There was the first flurry of white dirt. It went away. Hitt covered windows with pieces of material. It was not easy, for no means of holding the covering in place could be found.

Food was giving out. Pat found one of the strange things that were larger than the dogs roaming in the park. Considering ways to kill it, he thought of knives. He cut Hitt and his woman to make sure knives worked on flesh as well as on dead things like cans.

The beast was found, and the hunting party attacked it. Suddenly, Pat realized that he and the dogs were left to fight alone. The other men stood at a safe distance, watching.

Pat grew ferocious with a sense of outraged justice. The beast fought wildly, wounding him. He went down, fought on his back, felt consciousness leave him. In fright, he gave one last stab. Then came blackness.

He awakened to find himself a hero. His stab had cut deeply; the beast had fallen; the dogs had finished it. They would not let the others near their kill. Pat hacked huge chunks of flesh for them, had the men carry the carcass to the house.

He walked ahead, disdainful of creatures who would not fight. He strutted pridefully in an agony of pain before the women. Instinctively, they knew what had happened and silently mocked the other men. Valor received its first ulterior motive, for the women found their own punishment for cowardice.

More beasts, many of them, standing very still in a circle, were discovered. With great caution, the men crept to the attack. But the beasts stood just as still. With a

mighty blow, Pat broke his knife on one, stooped to examine the creature. His nose told him that it was not of flesh and blood. He stood up disgustedly, wondering what manner of thing made beasts from trees.

The tribe had attacked the merry-go-round.

It grew colder each day. Actual starvation now loomed. The clan was rationed as well as Brent could figure in multiples of one. One night each person would receive one whole canned herring. The next, perhaps one tomato or sardine or cracker. There was no way of judging food value.

Hitt had acquired three more skirts about his neck. His Napoleon hat rode proudly above. Hirsch wore two newly discovered sweaters, put on over his legs like pants. A truckload of winter underwear was found and worn over all other clothes. Mrs. Cosgrave wore only a fur-lined coat and felt the warmest.

Water in the White Room ceased to flow. Something happened to the fountain. A great fear came over the clan as it found the jet of water now still and cold and hard to the touch. But the dogs found water beneath thin ice at the lake edges.

Brent could not go forth, his old bones being knotty with the cold. Under Pat, he organized a daring expedition. It was to go in search of food—go far, if necessary. This was Pat's first trip abroad.

IT WAS very exciting. New, unknown sights and smells and sounds and discoveries. A tottering wall crashed as they passed. One of the party disappeared down a hole to come up later in front of them, bruised, frightened, but unhurt. He had fallen down a sewer. A large pack of scavenger dogs ran at their approach. In the distance

appeared occasional skulking beings. Pat noted with pride that they were not so husky as his tribe.

Stepping on a roller skate, he was carried a block downhill on a thrilling ride. There was interesting wreckage on all sides. He found a piece of nice-smelling food. When he bit its soft surface, it emitted frightening sounds. Once, it had been a horn.

Then, after hours of search, the stench of rot; the big cave littered with rotting vegetables and fruits and meat; disappointment; the exciting discovery that raiders had not known how to open cans, for there were piles of them! Some, opened on the spot, contained a rich, sweet red. But it was too rich to eat much of. More tasty was the white dirt found scattered about. They licked it up instinctively, for their systems were in need of salt.

They found stairs behind a swinging door. These, too, the raiders had missed. The upper floors were in perfect order. Ryan stepped upon a strange animal that made a noise and spat at him. He fell upon it with his knife, slitting its belly wide. It was a paper sack of flour.

The dogs darted away to return with a small, frightened boy. When he saw Ryan, he stopped crying and led the party to a corner. Here, lying sick beside a woman, was a man dressed like Ryan. Cheerfully, she played with a shining gold watch. She laughed. It was the first laugh the others had heard, and it made them feel good. She was Mrs. Ship, and the man the guard. They had lived upon dried fruit and water from fire buckets. They never remembered how they got there.

With childish enthusiasm, young Peter Ship brought Pat a small animal. It would make good food. It hissed at the dogs. Then it purred

and rubbed Pat's shoulder. He decided he would keep the animal.

A vicious-looking rat appeared on top of a barrel of dried fruits. With a leap, the cat bounded onto the rat. There was a short fight. The cat won. Pat approved of its fighting spirit. Also, he instinctively disliked that other thing.

Downstairs, little Peter found strange beings on round legs. They ran at him when he touched them. In fear, he flew to Ryan.

Investigation showed that they had use. They could be pushed and made to carry things. There were many, and Pat smelled them all. Only one was animal, he decided, because of its smell. Once, it had been a meat-delivery cart.

THAT DAY, the expedition lost its way home. Long after dark it was still wandering. Suddenly Hitt pointed to the distance with excitement. A beam of sunlight waved slowly in the air. Brent was waving a flashlight out the window. It was the first time the strange thing had been used for a purpose.

For a week the clan moved food. Many times they saw skulking human beings. Several they captured. Some had to be thrown from the windows of the house. There was the one, a husky buck Pat would have liked to keep, who stole everybody's covering while they slept, stacking it in the center of the main room. Another ate books. A third screamed incessantly. A fourth was lazy. Then there were others who were sick and died.

It was the day they moved the bags of foodstuff which they did not understand how to use that they met John Scappella, one-time taxi driver, and John Smith, one-time jeweler. Scappella came out of a side street, his arms loaded with big

knives. His skin was sloughing from too much raw meat, and his head ached from water turning stale. But he was happy. He had discovered an unraided antique store and found many shining swords.

He was brought up short by the giant Pat. When Pat took the swords and put them on some sacks of flour, Scappella merely grinned and clapped his hands. He felt no instinctive possession of the swords. But he felt that he should go where they went.

Nearer home they met John Smith. He carried two heavy bags. Mr. Smith was emaciated but noticeably neat. Pat stopped him with instinctive authority. He enjoyed stopping people now. He looked into the bags. He was struck with wonder!

Gold! Gold dishes!

At the house, Brent considered this. He himself had a gold shield, and it was the symbol of authority. This man had more gold, and should be more powerful. But, quite obviously, since he was shaking with fear while Pat held him, he was not. Brent took unto himself the gold and signed to Pat to keep the man.

That night, watching him in his den, Pat was surprised to see Mr. Smith disrobe. He took something off his neck which was quite complicated. Pat made him dress and undress again. Then he took him before Brent and had him repeat.

Brent was impressed by Mr. Smith's movements with his necktie. Correctly, he tied a four-in-hand knot several times. Brent gave him a can of meat in reward, and Pat showed him how to open it on something sharp.

A WEEK LATER, Mr. Smith's aptitude with his hands had created a standard way of tying a knot that

would hold. It was one of the most important events in new history. He was much admired, and set the fashion of neatness. Also, he taught the tribe how to dress and undress. This was immensely important, for the entire tribe, excepting himself and Mrs. Cosgrave, who wore only a loose overcoat, had acquired fetid sores from wearing clothes continually. Soon, he was given the important post of Keeper of the House and Storerooms under Ryan.

Clan life now ran smoothly until the truck driver awakened one night to find his woman gone. Instinctively, he knew she had gone to Smith, who was still sleeping in Pat's room. And there she was, attempting to vamp the little man. The truck driver started to kill Smith. Pat awakened to break it up by strong-arm measures in the moonlight. He threw the young man and his woman out.

The next day the matter was taken before Brent. There was instinctive sympathy for the truck driver. But Smith now belonged to Brent. An attack upon him was equal to damaging Brent's property. Brent settled the matter by ordering Pat to go forth and find Smith a woman and having the outraged younger man chastise his woman before the assembled group.

Pat picked ten of his huskiest men and departed.

He had not returned a week later when the entire clan became violently sick with stomach trouble. In the process of eating things from cans and boxes, they had eaten an unknown, nice-tasting powder.

All were sitting in one room, very sick. Mr. Smith, very green about the gills, suddenly astounded the clan by a mighty belch. It resounded with a force and quality of tone demanding attention even from

the sick. This in itself raised his status considerably.

But, lo, he performed the new world's first miracle. The mouths of the tribe were covered with froth. But from Mr. Smith's quivering mouth issued a large, translucent bubble. It floated ceilingward. Many more followed. The clan was immensely impressed. Here was mystic, incomprehensible power.

Years later it was learned that the powder had been soap.

When the clan recovered, Mr. Smith found himself something of a high priest. The new civilization soon acquired religion. Water, the broomstick, and the mop became its idols.

Brent now noticed that clan life did not run so smoothly with Pat away. He must not send him forth hereafter. He noted that life was easier as the number of the clan increased. Some were more useful than others. The women were smarter about many things. Mrs. Cosgrave was smartest of all. But she was perpetually after some man. In turn, she had vamped each of the professors.

Three weeks passed without sign of Pat. The nights were bitter cold now, and their stillness shattered by bloodcurdling cries of roving scavenger packs. One night, a pack invaded the lobby.

The next day, Smith and Professor Hitt investigated to see what could be done to keep strangers out. Hitt discovered a beautiful silver thing which swung like a branch in the wind. It swung straight out. There was a sharp click. It would not move after that, and it kept the clan from leaving the building except by windows.

John Scappella, intrigued by the thing's shininess and intricate mechanism, spent the day alter-

nately rubbing it and trying to get it open. Toward evening, he succeeded. He had learned how to bolt and unbolt a door. He was given the duty of bolting it nightly.

Heavy white dirt fell that night. Drifting in the windows, it made little pools upon the floor. Hitt tasted the pools and was greatly puzzled.

The dirt had turned to water!

## IX.

GLOOM POSSESSED the clan.

Snow caked upon window sills, making the house colder. Most of the floors were wet. Colds and stomach trouble were taking toll. Drinking from the lake involved getting legs wet. Knees were raw and achy. The raw wind bit through scanty clothing.

Unexpectedly, Pat reappeared, alone. Glowing with good health and cuts and bruises, he was now a man of the world. He wore an animal skin turned inside out. Once it had been a banker's coat. Beneath it, the hard muscles of his bare chest quivered with excitement.

He had a story to tell. But he could not tell it. He had so few grunts and gestures to speak with and could tell only of things which the clan had seen and understood.

There was fire, for instance. Some of them knew what fire was. It was a fearful thing that killed and burned. How could he make them know that it could also warm and comfort? And make things good to eat?

There was water on three sides of them. He tried to tell them that, and they thought he meant fountains.

He had seen a clan over a thousand strong. How could he explain a thousand?

But, with his limited language, he



tried to tell his tale of adventure, of war and discovery.

The loaf of bread, twelve blocks long, but stinking with rot—the countless times he had been lost—the great distance he had been—the thousands of dead and insane; far away, the city was rotten with corpses—the great packs of scavenger dogs that roamed the city—the countless battles he had been in and the men he had killed. He exhibited wondrous scars and festers and two gloriously bloody swords as proof of this.

The great stores of clothes and food and strange objects to the south—more gold than could ever be moved—the great things, like the one they lived in, reaching up into the clouds—the strange animal that was shiny yet breathed and talked. It had feet like the wheels of the delivery carts, yet when he got into it and touched it, it ran away with him and carried him blocks. It was still growling when it threw him out. The great buildings that leaned and twisted and were falling over. They were dangerous. In one he had fallen through a great way and almost not found his way out.

He had been sick from bad food and very cold, because there was nothing to cover himself with in some places. He had drunk water which was not water and burned his throat. Once, he had been without water for two days. His dog had saved his life a dozen times.

BRENT, in turn, told Pat what had happened while he was gone. He gave him a can of meat. But he had not forgotten Pat's mission. Where was the woman for Smith? It looked lately as if they needed more than one woman, in fact, for many of the men had suddenly developed interest they had not shown

before, so much time was spent in the house.

Pat looked sly. He turned and fled.

Nobody could understand it. After an hour, the clan decided he had run away.

Suddenly there was a great clamor and stir before the house. The clan rushed to the windows, fearful of an attack. Excitedly, Brent saw a clan many times as large as his—a rich clan with many boxes on round legs loaded with goods, warmly dressed and healthy-looking. And carried between two men a strange thing, frightening in aspect. It had a large red eye and spat smoke. And then, strangest of all, Pat making all that clan bow their heads before the house.

Truly, Pat's homecoming was royal and sumptuous. His prisoners numbered over two hundred, every one healthy and powerful. There were more men than women. This was too bad. Each prisoner carried much treasure with him, and in the carts before the house was more. There were foods and dainties and soft clothing and furs. There were many things never seen before.

Above all, there was fire!

And great was the wonder as Pat had it thrown beneath the cave that went straight up and it burned and gave forth warmth. And greater still when ten alluring women were commanded to heat food.

The prisoners, too, were exciting. There were beautiful women and strong young men. There were some immediately distinguishable as having brains. Pat told, with great pride, of how he had weeded out and killed those prisoners who would not benefit the clan. And the prisoners followed him loyally.

Eighteen of the prisoners, headed by a pert little girl and from whose

ranks the cooks were picked, were the chorus girls who had counted money at the ferryhouse. Also, there were the two doglike counter-men, her slaves; Stewart Hodges, still treasuring his top hat; a husky, quiet young man who had killed three men the moment of the catastrophe; Rane Maxwell, one-time publisher; Ed Everette, a reporter of his; the one-time mayor, looking jovial and thinner; Thomas Furrell, suffering from starvation; Kiki Randolph, with two black eyes bearing witness to Pat's strict discipline; Vincent Singe, who once had cornered the gold market. There was the remains of the clan which had formed about a small leader in the stock exchange. Many had been killed off. And there was little Gus Shueller and fifteen huskies who looked much like Pat. Each bore signs of the conflict which had made them Pat's slaves.

For all this booty, Pat had lost the lives of only two of his men.

The pert little girl rubbed against Pat. His woman saw, turned, and left the room. Pat felt sorry at that. He hurried after her. The first clumsy declaration of future true-ness by man to woman took place. Later, his woman sat lovingly beside him. She bore a black eye. But she was happy.

One of the new women vamped Ryan. This was a blow to Mrs. Cosgrave. As her diet suffered, she began to realize the advantages of fidelity. He now kept both women. Eventually, he was to acquire a harem of seventeen.

Smith and the professors, as senior bachelors, had first pick of the women. Smith drew a woman desired by the truck driver. He bartered her for the truck driver's woman. The pert little girl refused to be picked. Pat, hastily realizing

a dangerous situation, placed her under the protection of Brent. The rest of the women were paired off as far as possible. Some men acquired several women, some women several men. There were occasional fights, but not many.

The little bright-eyed one became known as "Eee," her favorite vocal expression. Drinking at the lake, she fell in. Chill and wet, she ripped off her clothes, rubbed herself briskly with a blanket. Much of the dirt of past weeks came away. After she was warmed, she felt better. Bathing was discovered.

She made the event plain to Brent, showing him the cleanliness of her body. He consulted with Hitt. Professor Hitt, suffering from dirt, courageously threw himself into the freezing water. He caught cold, but his sores disappeared.

Smith learned of this and tried. So much better did he feel that he tested his power in the new civilization. Baths for all, with Pat and his huskies ready to douse, became the clan's basic law.

Quickly now, with fire, cooked food, and cleanliness, the tribe returned to health. As if awaiting a signal, the fierce blast of winter storms set in. Deep snow and ice and frost, howling rain and slashing sleet, covered the city.

Brent's tribe, for a few brief weeks, had time to think.

## X.

### EXILE!

No death penalty of more civilized times, with its courtrooms, uniformed attendants, documents, and seals, could convey such tragedy and fear as that grim sentence. Not alone for the breaking of established laws, but for actions harmful to the tribe that had no precedent. A few

guttural grunts, a brief gesture, and two of Pat's huskies casting the screaming unfortunate into the street.

Rane Maxwell, former publisher, was first to go. A gossip, he had caused one of Pat's huskies to kill a valuable person, one of the professors, through error. Investigation proved the professor had been sick and the killer's wife ministering to him. Maxwell's gestured intimations had been sensational and nasty.

From the windowless windows, the clan watched Maxwell thrown into the sleet storm, watched him turn in terror and beat at the great silver-grilled door as a pack of skulking scavenger dogs circled around him. His screams and the howl of the pack cut through the cry of the wind. Then the cruel kill, the pack snarling and ripping his flesh away before he was dead.

Next went Kiki Randolph, caught in the act of trying to throw blame of theft onto the beautiful silent one who had placed herself under Brent's protection. From one man to another she had been passed. No man would keep her, and none came to her defense. At the corner, she was carried away by four marauders. There was the first flicker of savage mass humor as the clan considered how surprised the marauders would be to discover the trouble they had captured.

Other expulsions for theft, forceful possession of another man's woman, dirtiness, sickness, and laziness followed. Stewart Hodges, friendly, imaginative, lazy, was called before Brent for expulsion. His wits saved him. In a flash of incredible imagination, he put forward the thought that some tribe far greater than themselves had made the things they were using. Who?

So sweeping was this original thought that he was decided to be of value after all. Nobody had ever questioned where the city or anything in it came from. He was instructed to keep busy with such thoughts in the future.

Mrs. Hodges fell into displeasure when Brent learned that she had kept Hitt from an entire day of experiment on ways and means of cooking. Her punishment would have been severe had she not glanced out the window of her den while combing her hair.

Breathless, she appeared before Brent. A clan, perhaps ten times larger than theirs, was roaming through the park! In great fear, the clan rushed to the top row of caves and saw that she told the truth. Pat mobilized for defense, instinctively warning for quiet.

Hitt, the ex-mayor, Scappella, and Hodges went off to barricade the windows and doors of the lobby floor. It was the first piece of construction work, and the mayor became a personage. He it was who thought of using planks and firewood and, almost unconsciously, rope! Some of the planks had nails in them and stuck together.

FOR THREE days the clan stayed at posts awaiting attack. But the enemy disappeared without coming nearer. Scouts reported them moving far downtown, a husky lot, savage, without knives or swords, but powerful. Thereafter, Brent ordered a celebration of thanks. Food came forth in quantity. Good cheer filled the clan; punishments and hates were forgotten.

White dirt now covered the ground so thickly and it was so cold outside that the clan spent most of its time indoors. There were no

scouting or raiding parties. The two daily trips to the park, trips for water and wood were the only occasions to go forth. Heavy drifts of snow coming in the windows caused the floors to be damp most of the time. Smith noted that rugs drank water. A committee studied the strange fact and learned water would be drunk up by rugs and then could be squeezed out. When this was done, the places beneath were cleaner. Mopping and scrubbing became daily duties. Hodges and the mayor found how to make things secure with nails, and for the first time the windows were fairly well covered. The house grew warm and smelly. Tempers rose, and fights became more common. There were many fights over who would sleep in beds and next to windows. Housing was needed, but the clan must stay together for self-protection.

Little Gus Shueller astounded the clan by inquiring what lay behind the closed holes throughout the house. Hodges, ever on the verge of expulsion, recklessly suggested that there might be other caves like the one they were in. His insanity was realized. But, lo, when a closed hole was broken through, another large cave, stinking and clammy and wet and rotting flesh of things that had died, lay before them!

The discovery led to scouting the whole building. Scappella found a board with queer dead bugs and knives upon it. Some of the bugs looked like bugs he had seen on apartment doors. Taking the board, he went in search of duplicates. He found one. Little Gus thought the knife below the bug might fit into the funny hole in the door. It did! Eventually, it opened it! Locks and keys had been discovered. Scappella was indeed a mighty man!

Within himself, the idea of discovering how shiny things worked became a tangible thought. John Scappella found his interest in life.

The work of thoroughly cleaning the apartments took many days. Mr. Smith demanded inspection. No bit of mold or refuse or rot must remain. All rugs were taken up, all floors washed with melted snow. Hodges and little Gus were given a whole cave to themselves as reward. Scappella did not want one.

The beautiful silent girl found a three-legged thing with a long row of great teeth. It bit at her. It made sounds. She was frightened, but something about those sounds made her instinctively go back. She found how to break the thing's jaw so it would not bite. After that, it made sounds when she touched its teeth.

It was a piano.

The little captured leader who had once fought in the Stock Exchange and now was known as "Haw," asked Brent for the girl. Brent was agreeable. Haw was a good worker. The girl looked closely at Haw, waited as if listening to some inner voice, then shook her head. She was puzzled. Brent respected her wishes. He would not give her up.

IN THE apartment of the imaginative Hodges, Scappella discovered a strange thing that aroused his curiosity. It shone like moonlight and was large and had legs and a mouth which opened. It also had a tail. Inside its mouth was a great black tongue and many things which glistened. He touched one. Instantly, the thing barked! Then it made sounds like the wind. Then there were sounds nobody had ever heard before, beautiful sounds which enthralled them.

In all New York there were pos-

sibly not more than ten hand-winding phonographs. This one was to have a profound effect on history. For electric current was gone, and electric machines could not be operated.

Scappella learned to make the thing talk. He tried to barter it with Hodges. Hodges was keen. He liked the machine. It was valuable. It was worth a dog like Brent's that would stay with him and come when grunted at, two women, as seductive as any in the tribe, or his weight in meat.

All dogs, outside of Brent's and Pat's, were wild. Meat was impossible to get. John Scappella had to find two women. Searching, he rushed back with news. He had found a whole cave full—maybe as many as were in the clan already! Hastily, a raiding party was organized.

It was cold outside, and the warriors' feet were cut by sharp ice through the soles of their worn-out shoes. But boldly they attacked the cave. Inside, they could see many women. There were no men. Hitt, who had no woman of his own so far, saw one in an upper window who took his fancy. Petticoats flying from around his neck, a large sword in hand, he forced his way to the front, to the side of Pat. They pushed mightily against the barricaded door. Suddenly, great hard pieces of white dirt pelted down upon them. Then the cave began to fall.

The warriors ran back to safety. They looked. No, the cave had not fallen. Women were standing on the top making soft white dirt into hard little balls while others stood with bricks in hand. Their own toll of wounded had been heavy. This was the first planned defense Pat had encountered. He felt shame

that women should drive them off. He grew crafty. Messengers were sent to Brent for the odd things that spat sunshine. Pat and his warriors pretended defeat and hid around a corner until dark.

The ruse worked. Silently and unexpectedly attacking, they forced the door. The women fought madly and tore and scratched. Pat, at an order, had the flashlights turned upon them. The women were blinded and frightened and could not fight so well. Using fists and swords, Pat's warriors soon won the battle. Hitt captured the woman he wanted and bore teeth marks on his cheek ever after. Great general that he was, Pat learned two things for future warfare. First, surprise attack. Second, frightening the enemy with unknown tricks.

The raid was a great success, netting over sixty women, mostly young and husky. There had been no men. Smith insisted upon cleanliness, however, and the next day, in the midst of a snowstorm, the women were hurled into the lake. Four were lost beneath the ice. Three others died from cold. The remainder were better for the bath. Pat's warriors suffered broken bones and scratches.

Hodges took two women, parted with his phonograph and records. Hitt, little Gus, and Scappella retired to study the new machine. Brent's woman, who had discovered the piano, joined the students. Some of the records were very old. But the little group did not know that. They played them over and over. Instinctively, they tried to imitate the sounds.

LITTLE GUS first noticed the difference between voice and music. Voice was something like their own grunts. At the end of a month he

astounded the clan by distinctly pronouncing:

"Yes, we have no bananas," and "Baby, I love you."

Nobody knew what the words meant. But that they were words and could be learned was proven. Little Gus received a sword and was allowed full-fledged manhood for this. Soon he could say many words and sing a few tunes. But his own speech remained limited to perhaps a dozen grunts and simple sign language. The woman learned to hum. She became known by that name—"Hum."

The new women learned quickly. Several of them were unusually fat. But all were smart and soon contented with their new lot.

Winter was leaving now. A few days of slush; then suddenly it was gone.

Green came upon the trees, and clean smells scented the air.

Life again became interesting and exciting. The clan turned to the open, scouting for new and thrilling discoveries.

Smith was the only darkening influence. He made the clan take baths.

Many more swords were found, and these were useful, for the men of the clan were not all armed. Part of the fire was moved out near the lake and tended there so that food could be prepared in the open.

Joy and gladness filled the clan's heart.

Suddenly, the first child was born. There was great excitement among the men. But the women accepted the fact as if they had been expecting it all along.

Professor Hitt grew furious that he had not the means of expressing himself. He felt a profound disdain for women. Here, perhaps the greatest mystery in all memory! And

women behaved as if it were an everyday occurrence!

As a matter of fact, for about ten days it was.

For the first time, Mr. Smith's will met defeat. In a body, the women threatened revolt if Brent forced their offspring to be thrown into the lake.

Pat's woman, too, presented him with a lusty, bawling infant. Instinctively, he felt he had something to do with its being there. At first he disliked the little thing. Yet he was curious about it. After a time, his woman held it near his face. A tiny hand wandered out to grab his nose.

Pat felt an unknown sensation, a new instinct. He liked it after that. He felt differently, more possessive and softer, toward his woman, too.

## XI.

THE CHANGE of weather brought to Brent the first thought of time. Within his memory, there had been three different types of weather. He knew that, except on rainy days, the sun rose and set with some regularity. It was not very regular, however, for he had learned that sometimes it stayed out longer than other times. It was staying out longer these days. There was a great deal of rain and soft wind.

Soon he must get the tribe back to work. But just now the lying around and idle play and talk seemed to be doing great good. Bodies were healthier, spirits were better, sign language was improving rapidly. This, he felt, was important. He noted there was a great deal of exchange of women. Throughout the past months, men had taken any woman who came to hand. Now they seemed to be choosing those they wanted.



There seemed to be something mystic and not quite understandable in this. The men no longer regarded women only as property. Women had a say in matters, and the most valuable women were those who could do something well, such as cook or find new uses for things.

Mrs. Cosgrave suddenly ceased running after other men. A soft look came into her eyes; she was more attentive to Ryan. She grew larger and rested a great deal. Once a troublesome slave she had vamped during the winter caught her alone in the park. Swiftly she reached for a hidden knife and stabbed him. The matter was brought to Brent.

Man power was valuable, and by rights Mrs. Cosgrave should have been punished. But the women upheld her action, and Brent and Pat felt that in their attitude was some instinctive right which men could not understand. Ryan, who felt that he should not interfere with Brent's decisions, looked relieved when no punishment was meted out. Then Mrs. Cosgrave presented Ryan with triplets. And great was the wonder and respect of the clan.

The winds now held a caress, and it grew warmer by the day. Much time was spent in the park. The clan grew peaceful and secure; no unusual events occurred. Pat's dog now followed the fashion and produced a litter of six pups, of which Mrs. Cosgrave showed great jealousy, the number being double her own remarkable performance.

There was a great deal to do. Knowledge of various things was divided among members of the clan, and each wanted to learn what the others knew. Smith had all rugs, drapes, and other heavy materials brought to the park for airing. Eee, feeling her importance diminishing, pondered long over what she could

do to attract attention. She was in fear that if she did not reestablish her importance, Brent might give her to some man. And there was none she wanted. So it was that she found that rugs and materials could be cleaned, just as floors could be cleaned with them and bodies cleaned by water. This was of great importance, for it helped to rid the clan of lice and annoying vermin.

**TOWARD MID-AFTERNOON**  
one April day, little Gus and Peter Ship ran up to Pat with great excitement. With gleaming eyes they grunted and made gestures. He, too, became excited. Gathering his fifteen huskies and Hitt, who was washing his petticoats, he ran off with little Gus.

At sundown, the clan lazily gathered up its belongings, drank at the lake and fountain, which was now spouting again, and started toward home. Men and women, preoccupied with their own thoughts, paid little attention to anything else. As they neared the house, they could see Haw leaning from his window and waving. Some waved back. Then they could hear him shouting excitedly. They could not understand what he said, for sounds were still limited to about forty meanings. But they looked where he pointed, back into the park.

Terror froze their hearts.

Over the brow of a hill swept a motley, wind-bronzed and ferocious tribe of beings—many of them naked, none well clothed, all grasping clubs.

They filled the horizon. There were more than a thousand! All men, all as husky as Pat!

With a bloodcurdling war cry, they swept down the hill and after Brent's tribe. Their hair was matted with filth, their bodies reeking

with odor. They were terrible. Like an ominous brown wave of death they spread out and came on, invincible.

Insane fear possessed the tribe. Turning to fight, a few brave men were killed in the park. Others were overtaken and felled as they ran. The rest rushed to the house, slamming the great silver grille shut at the entrance to the lobby. Some of their own clan were locked outside, early victims of the cruel enemy.

Numbed with fear, panic-stricken, Brent's tribe went entirely out of hand. A few reinforced the grille; others went for weapons; some

stood at windows and hurled whatever came to hand. But most ran pell-mell throughout the building, getting in the way or hiding far back in deep closets.

Brent wished for Pat. He himself knew little of fighting, could command little respect amid the pandemonium. Defense seemed useless. Already the brown horde were leaning boards and logs against the building, ramming at the grille and blockaded windows of the first floor.

*Outside the building, a thousand utter beasts.*

*Inside, the dying hope of a new civilization.*

*To be concluded in the next issue.*

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*We have seen mankind stripped of memory, which means science. For science is the classification of knowledge, and knowledge disappeared.*

*Goddard's plan has not succeeded in benefitting the earth, but has thrown it backward toward savagery.*

*Can a few men, more brilliant than the mob, turn the tide upward toward the ideal Goddard sought to establish—or will greed destroy the vestiges of idealism?*

*The reestablishment of science and the language are necessary. Can Brent's leadership accomplish that?*

*What a wealth of study lies ahead in this struggle of man to understand the superscience which surrounds him, to turn again the machinery of a past age, to communicate, to travel!*

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Illustrated by  
C. R. Thomson

# Short-Wave Castle

*A Story of Scientific Accomplishment*

by Calvin Peregoy

**D**OCTOR CONKLIN stood upon the solarium tower of his lonely castle. It had amused him immensely to build this anciently designed pile far in the wilds of the Rocky Mountains. From the outside, an antique. Inside, the most modern chemical and electrical laboratory in the world.

With what he liked to call "synthetic gold" he had built this castle and laboratory. Once, he had asked the government to aid him to manufacture gold. They had said it was impossible to make it cheaply enough, refused to consider his new principles of metallurgy and electronics. Later, when he had found

how to make gold at a cost of around five dollars per pound, he had kept the secret. It would die with him.

Now, as he stood watching the blood-red sun, he wondered if some of his own blood were not coloring it. He felt old and tired, an anachronism of the very-ancient and super-modern like his castle. For he had played at being God. And now, the responsibilities of a god weighed heavily on his conscience. The creatures of his making were rebelling. That, he did not mind. But if their rebellion was successful, they would annihilate themselves; or they would kill the race which still lived, yet was their own ancestor.

A plane, flying rapidly through the high upper reaches, came into view, but he did not notice it. He was thinking of the words of his friend, Doctor Weiss, the scientist, when the experiment began, a short twenty months before.

"Whatever happens, don't carry human emotions into the future. Remember, Carl, you will be living in two times simultaneously. You will be responsible for the actions of beings who may grow mentally beyond your very comprehension; who will doubtless lose most of their human emotions and perhaps think with a clarity which we to-day, would regard as warped. But it's a great achievement. I wish you luck."

As long as Weiss's descendents had been in power, all had gone well. There had been sixty generations of them. Then, the unexpected upset. The Mathematicians and Logicians had overthrown the Scientists. And trouble brewed. He was out of touch, could not think in the same key as men sixty generations in advance of his.

Realization that the plane was going to pass through the space over

the castle disrupted his thoughts. Wildly, he ran to the control room of his laboratories, threw a switch and redirected the angle of four huge crystals. There was the deafening bark of a gigantic spark of power, tubes on the walls glowed with a burning blue light. The copper smell of a sudden overload of juice thrown into an emergency converter filled the air. He looked from his windows.

Too late! The plane, after a series of wild bumps and jolts, got through the space. But he could anticipate the newspaper stories of men who had aged twenty years during a flight over the Rockies. They had come directly into the path of those short-wave, ultra-violet death rays being brought down from the sun.

Captive rays they were in his laboratory. But there was that infinitesimal hole he kept open in the stratosphere. And between that hole and his magnetic control tubes, the rays filtered down through space with a blasting heat that could not be reproduced on earth with an annual burning of billions of tons of anthracite. They did not come in one pencil-point line, but were spread over a space several miles wide, being magnetized into his laboratory one hundred feet above the ground.

His daughter, an unspoiled, elfin girl of twenty, came into the control room.

"Moving the magnetic stream, dad?"

He smiled thinly. No use telling her the plane had flown directly through the radius of those death rays; that fifteen or twenty years had been snatched from the lives of innocent men without cause.

"Third year of the sun spots' waxing," he told her, "begins to-mor-

row. The rays get too strong. I've been reducing the hole in the stratosphere."

With a light reminder not to be late for dinner, the girl danced away. He sighed, hoping she would never see the monstrosities developed from men; things hidden in a forbidden part of the castle, a series of long rooms and gardens from which sometimes came the smell of chemicals, the burning of electricity, or perhaps music played as no earthly creature had ever played before.

One eighth of an inch of ozone gas the only wall between earth and the death rays of the sun! He thought of the mystery of the upper reaches of the stratosphere, forty miles above the earth, and of that thin film of gas spreading through miles, but such a thin barrier, if compressed, against certain death for a whole world. Ozone, a form of oxygen, differed only from that gas in that its molecules are built up of three atoms instead of two. Supposing some tremendous change in the universe broke one atom away from the ozone molecules? Ozone would become mere oxygen! That so-thin wall of salvation would fade into nothingness human life upon the world into eternity and oblivion.

TO SAVE the world from such possible fate had been Doctor Conklin's original plan. Long days and nights he had slaved with electronics, metallurgy, tubes, and little-understood cosmic rays and magnetic fields. His eyes had dimmed from work with the bolometer, the electrical thermometer sensitive to one millionth of a degree. He had struggled with the time-table of the eleven-and-a-quarter-year wax and wane of sun spots until he felt the spots and coronas branded into his brain.

And for what? A people he could not explain these things to, because they felt no emotion over the sufferings or fate of the human race, were disrupting his great dream. He had hoped they would solve many of the ills of the world. Instead, they had become one more worry.

To save civilization, he had created a monstrosity. Now his creatures threatened to overthrow their creator. Only one original precaution—thank Weiss for that! He had deprived his beings of human strength. And he had kept physical power, even chemical and electrical power of sorts, away from them. Give them five years' trial, Weiss had warned; about one hundred and eighty generations. Their hereditary good and evil points should show within that period.

It might have been better to have taken things more slowly, kept in closer touch with their thoughts and tendencies. Then Doctor Carl Conklin thought of the futility of ever trying to keep abreast of thought generations ahead of oneself. Well, he would give them five years, then take a chance. Brain capacity had little to do with outright progress. He could deprive them of some of their more dangerous literature, take their more dangerous chemicals and electrical apparatus away, stop them from knowing the secret of their existence, while making it clear there was a mystery.

Sometimes he wondered just how this new race had actually evolved. He could not grasp their advanced science. For his part, he had simply taken an average lifetime of seventy years and speeded it up to one month, normal time, by keeping the race under a consistent atmosphere suffused with the short-wave, ultra-

violet death rays which he brought through the stratosphere into his laboratory.

He could speak with the people only by transcribing his speech into slender silver lines on film, as a talking picture, speeding the film up thousands of times. Otherwise, the rapidity of life in the world he had created would cause years of their time to be spent in unraveling conversation which took mere moments of his. And, to understand them, the reverse process had to be employed. They kept expert interpreters, for their own language had long since evolved into a staccato language sounding like wireless signals, only thousands of times faster.

Months before, these things, who lived a lifetime in the course of thirty days, had discarded all regard for the physical being, adopting a scientific method of carrying on the species by unions of brain elements, a process of molecular electronics beyond the comprehension of Doctor Conklin. And they had purified the race so that each family—and families were small—specialized in some strong, hereditary ability; mere children, even in their own periods of time, being able to play an instrument or make rapid mathematical calculations generations in advance of the thought process of the world of their creator.

Now they wished to burst their bondage, the new dynasty of Mathematicians realizing their superiority over Conklin's race. He could no longer approach them, make them understand the humanitarian outlook as he saw it. They had become cold and ruthless, lacking sensations of the body, oblivious to all laws excepting Mathematics and their Logic.

Late that night, he suffused their atmosphere with newly conquered

infra-red rays, stupefying to mentality. In the midst of their imposed slumbers, he stole into their laboratories, took from them dangerous electrical and chemical equipment. Stole, too, and burned in a corner, their histories which told something of how their race had been founded. And he felt that he was meddling with a future which had no business arriving before the end of another two or three thousand years. Yet do it he must, for this future, which should not be here, was his creation and responsibility. Advanced civilization, in that hidden, anachronistic, mysterious laboratory in the Rockies, had met a setback of generations in moments.

**MATHEMATICIAN 180AAA-XXX1** looked at his confrères with astonishment.

"The slow one who lives forever," he said, pointing at distant giant legs of flesh and blood, "has sent the startling message. There is more to come. But this is vastly important. Why he has waited so long he does not say. He has infinite ignorance, but he gives us material of value."

His swift language of brief, staccato stops and starts was listened to with great attention. The people of this odd world, imprisoned, yet with knowledge and ability in certain directions greater than at any time in the history of man, long had waited for information which might make possible their freedom. It was simply an idea, a feeling, that superior intellect should not be enslaved to a barbarian such as the eternal Doctor Conklin. For their simple needs, they had all they might desire; excepting liberty and supplies of chemicals and electrical power.

Once, generations before, they had



almost fooled the giant. The Electronics had developed a means of creating power out of their atmosphere; great power, greater than any ever conceived. But some instrument of the giant's had told him power was being taken from their atmosphere. He had put controls upon the molecule and atom element of their air, and they had nearly suffocated when they attempted to draw power off. It was thought they might some day develop power out of the earth. But they had no man power to begin with, to dig for them, or carry heavy material. Their electricity was marvelously efficient. But the supply was limited.

Of a sudden, the Mathematician threw down the head phones with which he was listening to the transcription of the giant's words. His race, in their fight to make the most of life, had become infinitely small, their size giving longer life, in mental action, as it diminished. Even they were sometimes awed by consideration of the tremendous size of instruments their immediate ancestors had used, one, a piano nearly two feet high!

"At last! The mystery of time is solved!" he shouted. "This explains why our calculations of time have failed to solve the mystery of the strange beings and their different world. They use different time! Preposterous! The giant says he was an intimate friend of my original ancestor! That must be a question my grandfather asked him. He says that was one hundred and eighty generations ago—at the very dawn of our civilization. My ancestor was as large as he is. They did much work together.

"Think of it, this being has lived all time. But his knowledge and brain are infantile. He would be ignorant by comparison with our

youngest child. What seem the most simple computations to us, ones which young children do mentally for exercise, are undiscovered mathematical complexities to his world. They still use adding machines for simple addition and multiplication."

Humorist 180BGFCL77 laughed abruptly. "Not that it matters," he commented.

The Mathematicians turned stern, cold eyes, devoid of humor, upon him. He was not a pure-line descendant, but came of a cross between a younger branch of the Humorist family and the elder branch of the Wits, his last two set of numbers and letters showing his mongrel breeding. He was given to the idiotic habit of his family, laughing at things that obviously had no humor. As a matter of fact, the leading families of the race, such as the Mathematicians, had long banished laughter from their hereditary make-up.

"Not that it matters in the slightest," the Mathematician continued. "We could obliterate the world out there within a lifetime. But consider the strange facts. One of our lifetimes is only a month to their way of reckoning. Yet they live roughly the same amount. That is, they accomplish about the same things in one generation which we do. But they live as long as two thousand five hundred of our generations!

"That being so, the giant who calls himself Doctor Conklin," he pointed again to the immobile person, "considers he has given only a small part of his life to our creation. Yet, we are one hundred and seventy-nine generations older than he is. At this very minute he is moving, no doubt, but his movements are so slow we cannot see them. That is why all his ancient language must

be transcribed onto film and speeded up. Otherwise it would take months of our life to hear a few of his moments of conversation."

"The perfect paradox!" The Humorist chuckled. "The most intelligent beings on the face of the earth dependent for their very living upon a person of infinite ignorance!"

AGAIN THE Mathematicians eyed him coldly. Their large, egg-shaped heads held mouths less than a fiftieth the size of his. Their brows were smooth, as was the whole contour of their heads, which sat upon bodies less than a third as large. Often, during the past twenty or thirty generations, their family had thought it would be better if the Humorists and Wits were annihilated. But they seemed to have great popularity among the Writers, Historians and other backward groups.

"Conklin's useful," commented a Scientist. "Don't forget that he is carrying on many experiments for us which we could not carry on ourselves due to the limited time we live in relation to the action of some of the elements we use. And he controls the secret which makes us so different, living with different times and carrying on our species in a different manner. My ancestor, Scientist 140AAAXAA1, wrote in his ponderous work that Conklin's people still have children of the body, while for more than one hundred generations, our species has been a creation of the mind."

"Quite in fact," said Wit 180-AAAXXXXX1, who from point of family could look down even upon the head Mathematician, "we have little body left even should we desire a child of the body!" He shrugged good-naturedly in the direction of Pianist 181AAAXIB, a pencilly

looking person with tremendous ears, four arms upon each of which were twelve fingers, very prominent bulging eyes, and great long legs. His glance passed over to one of the younger Draftsmen, a being who made his way around upon his hands; hands, arms, and eyes, with an absurd set of shoulders, ending in useless stumps of legs not as large as his fingers, constituting his body.

"This is quibbling," spoke a Philosopher, a person of gigantic head proportions, similar to the Mathematicians, but with a more human mouth and eyes. "The problem which we have faced for generations still faces us. Shall we revolt against our ignorant master? Or shall we leave that to future generations? This is a matter of superman life and death. Conklin has created our race, given us our food and atmosphere. Unless we discover his secret before his death, the death of our race may well come with his own demise. The world in which we live is territorially limited. We know nothing of the world outside excepting what Conklin has told us and shown us in pictures. We are thousands of his years ahead of his race. Yet we might not be able to live long enough to solve the mystery of our existence in the world we know nothing of."

"With the mystery of time solved, we can accomplish miracles upon the same basis as Conklin's people," spoke the Mathematician.

"And in the end, we die. Perhaps sooner, perhaps later, than Conklin. What is the difference?" the Wit asked with malice. He knew the Mathematicians would never admit the possibility of anything which could not be solved with dimensional figures on paper or in their heads.

"Has any one ever asked Conk-

lin how he created us?" inquired the Humorist with an amused chuckle.

The Historian looked at him shrewdly, while a group of the Writer family seemed taken with a palsy of laughter and excitement.

"The original records of our first ancestors were burned in the terrible fire of generation sixty-three," supplied the Historian. "Our early ancestors were on excellent terms with Conklin. As long as the Wits, Writers, and Scientists held power, our race was in close contact with his thoughts and wishes. It was just prior to the fire, when the Mathematicians and Logicians dynasty began, that misunderstanding with Conklin began. For generations he deserted our race. And only lately has he come back and reopened communications. I disagree that we can ever overcome him. Not, at least, until we know how he made us and how our living and atmosphere differs from his.

"Nobody has ever asked him anything civilly within the past fifty generations. He lives in a barbarous world which might annihilate us were it not for his protection. Do not forget, there is not one of the historically called 'human attributes' left in our midst. We lack physical strength. In all our ranks, there is not one physical force. We live in a world of mentality, and our mentalities are all that function.

"There is not one body comparable to the ones we have seen in pictures, like Conklin's, we suppose, if we could see it fully. Our science and mathematics are superior to anything his race will have for hundreds of their years. But we have not many chemicals to work with. Conklin has guarded well against revolt. We have not even many of the chemicals of our ancestors. And our electrical apparatus is definitely

limited. We have progressed beyond his times only in generations and brain power. Our actual power is very limited."

"In fact," said the Wit, "we might almost be considered slaves to the barbarian! But we are immensely cultured. Our Mathematics are so vastly superior! And Violinist 179-AAAXX02 could no doubt play fear into their entire race." He halted, aghast at his witticism.

The Mathematicians looked at him with eyes of profound disdain, yet with sudden respect.

"One of the E's! If he could hold the tune for one minute—if the oscillations could be perfectly broadcast over purple waves—it would work! Every being in the world would be overcome with fear for hours!"

"We can set up a screen of protective rays. What we need is the knowledge of how our atmosphere differs from Conklin's." The junior member of the Electronics family spoke. His body was thin, perforated with insulation holes. He lived entirely on various electrical currents.

A council meeting was called. It was decided no superman was nearly enough human to make an appeal to Conklin. Yet an appeal must be made for him to take a delegation into his world, help them to live with the same time periods so that they might secretly study the ways of that world and save their own race while fear took possession of the barbarians. The two senior Imaginationists were called in.

"A mongrel," they decided. "It must be full of Wit and Humor and Pathos, as were our original ancestors. Yet it must have something of the Scientist and Electronic and Mathematician so that it will be able to guard our interests. Specialists of pure mind-strain can make up the

rest of the delegation. But the leader must be a mongrel."

THE MONGREL was bred, the plea made to Conklin to bring a delegation into his world, headed by a man who would be similar to himself, but including specialists, brains of pure lineage. The details of size and time difference were stressed, for it was imagined that Conklin might not be thoroughly aware of the progress of one hundred and eighty generations, although it was known he studied the superman through a strong microscope.

Excitement prevailed throughout the super-civilization as to the breeding of the mongrel. None but the most backward of intellects were used. Members of the Wit and Humor families, of the Scientists, Electronics, Metallurgists, Historians, Writers, Composers, Pianists, and many other families were drafted to produce the conglomeration of mental abilities and weaknesses which would produce a mind somewhat similar to Conklin's. The very scum of Supermania was found. And great was the glory of Electronics 180AAAXX11 when he produced a perfect nitwit, a child who could barely figure the cube root of trillions in its head before the end of its first year, their time.

No answer came from Conklin, however, during that generation or the next or the next. In the 185th generation, the supermen began to despair. Then, quite unexpectedly, and throwing off all calculations of the Mathematicians as to when the answer should arrive, Conklin sent word. He would bring the delegation into his world. But their lives were their own responsibility. He lived among barbarians. Public sentiment might be such that the strange creatures would be

killed. He could not find a means of putting their brains in other bodies. They would have to come as they were, although he could increase their size and make it possible for them to live in the atmosphere of his world.

Throughout all super-civilization there was great rejoicing. The backward mongrel was feted, the hero of the hour. It was very dumb, far dumber than its originating ancestors of four generations back. Already aged thirty, it could do a little of many things, but absolutely nothing even as well as one-year-old, pure-line beings. In the excitement of the moment, it was thought it might even be as ignorant and mentally deficient as Conklin!

The leading Scientist and Violinist, however, were the powers who would break the shackles of the barbarians and save their own civilization. A weird three heroes! The mongrel, a long, thin body, perforated with insulation holes from his Electronics blood, his head shaped behind in a conical motif, his forehead bulging and reaching far down his face, his eyes mere pin points, his mouth larger than even the leading Humorist, one ear larger than his entire head, the other missing completely. He had little body, a disappointment to the Mathematicians who considered this too much a sign that he might have some brains. But he did have feet and legs of sorts, although much smaller than his ear. This was considered a good omen.

The Scientist was entirely head and arms. He had a prominent nose which could tell chemicals merely by their scent, and fine ears like a bat's wings with which he could catch the revolutions of the fastest motors, or the oscillations of electrical impulses. His hands were flexible

claws of many joints, capable of holding many test tubes and manipulating several of them at a time.

The Violinist was a long, tapering body, a ribbon of matter that vibrated and pulsed with strange music and sounds seldom heard or noticed by other people. His arms were immensely long and flexible, and his left hand had seven fingers. Yet they were human hands, the fingers long and well-formed, soft and caressing as a woman's, yet hiding spring-steel strength.

At a great banquet of many-course electrical units, vibrations, and cosmic rays, with a few condensed foods from their ancient captor, the Mathematicians made clear the plan. The delegation would go to Conklin's world, study its habits, keep out of sight and obey him temporarily. The half-wit would try to meet him on even ground, to win him to a belief that the supermen had no longer any intention of uprising, but wished only to venture forth into the strange atmosphere and offer their superabilities and great brains to serve man.

The Violinist would play very simple music which Conklin could understand, but he would play, too, hidden subtle strains which would lull him into false security and faith. Electronics would study the equipment at hand for broadcasting the E note which was to terrify the world of barbarians. He would find the source of power, so that immense electrical power would be theirs at a moment's notice.

The Scientist would learn the method of controlling the atmosphere of the supermen, and what means could be used to make living in the barbarians' atmosphere possible. Then, so there might be no suspicion, the delegation would return home on a visit to tell all in

detail, for ray communication might be intercepted.

Thereafter, the plot would go through as planned. The leading Mathematician himself computed their mathematical chances of failure over the nine points from the decimal.

THE MONTHS waiting for Conklin to keep his promise were long and anxious. At last, the day of the great message arrived. The delegation was to move to a large glass and metal cylinder which would be placed near at hand. Once inside, they were to seal the door. Conklin would give them a treatment of rays, to overcome the effects of living for nearly two hundred generations under the influence of the life-speeding death rays.

Their size would be increased somewhat, although not to anywhere near his own size. A gas would be supplied them, and they were to take it and diffuse it through their beings with electrolysis. This would slow their lives to the speed lived by the barbarians.

It was an exciting adventure. The entire nation of supermen turned out to escort the heroic delegation to the cylinder. And for many the procession was of tremendous difficulty, for some had practically no means of locomotion, and the electric robots which usually transported them were at a premium for the day, there being an insufficient number to go round. The Violinist left his violin until his return, after consideration.

The delegation passed through a few minutes of unconsciousness. When consciousness returned, the members found themselves many times larger, perhaps half as large as Conklin. Their faculties and rate

of living had slowed to his rate. They had some difficulty learning to get their breath with the new atmosphere, but soon they were at ease, on low couches from which they could slither and crawl onto the carpeted floor of his private study.

All of them knew his antique, archaic jargon. They had difficulty in believing it was possible for any one to be so utterly devoid of learning and brain capacity. But even he was not so ignorant as his barbarian friend who was introduced as the world's foremost psychiatrist. Secretly, some of the delegation smiled to themselves. Imagine living among a people who had such undisciplined minds that they needed mental attention!

For days they learned of the various infantile habits of this land. Conklin explained his fear that some day a universal disturbance would turn the ozone into simple oxygen and that the uncontrolled, unfiltered death rays of the sun would sweep the world to destruction.

The Scientist grew annoyed at the story. If that was all these simple people feared, why did they not invent some protection? Already, with chemicals and electrical power at hand, he had thought of a manner of screening the world for all time.

At the end of a week, Conklin brought his guests up short. Although they had lived only a week with him, even to their way of timing, their people had already lived through one quarter of a lifetime. They had been deceived by the time element, nearly forgotten it. He took them to a great parapet running about the several acres that made up their own world, let them look through his high-powered magnifying glass at their own small

world. They could not see a great deal, for although figures could be seen, their actions were so quick as to make a blur every time they moved.

The Scientist could contain himself no longer. Why did not Conklin place a ray filter in the magnifying glass to delay action so that he could see things, at least partially? He was dumfounded that the principles of such work were actually still unknown even to the barbarian.

The delegation thought slyly of its plans to overthrow these barbarian monsters. To some, they seemed amusing. But to most, they seemed only hideous animals and untrained minds.

"Almost," the Electronics commented to the Wit, "as if bodies were something important!"

"With ten bodies such as Conklin's, we could have dug into the earth or overcome his power generations ago," the Wit retorted. Yet, he, too, was disgusted. Particularly when it occurred to him that some one of his original ancestors might that very moment be living as a barbarian.

The next day, the delegation was to leave; return the following one. That night, the half-wit discovered a violin. As he had Violinist in him, he could play. As a matter of fact, he played nearly as well as the best violinist on the earth of the barbarians. But his music sent the super-Violinist into anguish.

Seizing the violin from the half-wit, he brought forth cascades of music such as never had been heard before. He felt surprise. This violin, made by a barbarian, had nearly as good a tone as his own. He examined it closely, learned it was a Stradivarius. But the name meant nothing to him.



Yet he liked the tone. He decided to stay with Conklin while the rest of his people returned. They could bring his own violin when they came back. For of course the barbarian instrument could not produce the note needed to throw fear throughout the globe. Yet its unsophisticated and sweet simplicity of tone appealed to him. He found new feelings in himself aroused by the simplicity, suspected he might not be as divorced from his ancestors as some of the rest. He began to respect the barbarians a trifle.

All that night he stood in the middle of Conklin's rug and played. His people were talking in their secret language of the plot. Everything was ready. In no time, the super-Engineers would rearrange the world, now that tremendous, practically unlimited supplies of power were at hand. But they did not listen closely to his music. And Conklin did. The Violinist felt highly displeased with his people, while to Conklin he began to take a liking.

Next day, the delegation went through the reverse process of atmospherization and were reduced to their former size. Conklin, impressed with the scientific success of his experiment and talking with his creatures face to face, had not suspected a plot. He would bring them back in a day. As they took their places in the gigantic cylinder, they heard the Violinist still playing.

THAT NIGHT the Violinist paused for a moment. Conklin had gone somewhere. He felt curious about the house, went through several rooms. Suddenly, he stopped. His ears caught the simple strains of a childlike piece from a piano. Rapt in a new-found love of musical simplicity, he stood listening. Tracing

the music, he came upon another room, stood looking at a beautiful girl seated before a piano. And in his being, so unphysical and futuristic, arose still another feeling—love for the girl who played such simple music with so much feeling, a supreme, divine love for the daughter of Conklin.

Again she played the piece. The Violinist felt a great wave of love and emotion sweep over him. Standing in the shadows, his ribbon body undulating to the rhythm, he played an accompaniment, played with a pathos and simplicity never heard in the land of the barbarian or of supermen. The girl finished the last chord, sat lost in marvel at the music.

A shining light was in her eyes, a light of love and passion. Slowly, as if drawn by strains from the Stradivarius, she arose, came toward the figure hidden in the shadows. He watched her coming, saw the beauty in her soul and appreciation of his playing. Then, like a squall, he saw her face change to surprise and horror as she caught sight of his body, saw her shrink back and cry and fall.

He did not understand the expressions, but the cry pierced his ears with a tale of one hundred and eighty-five generations. The noise, the utter fright and nausea of it, told him in a language he felt to the depths of his being that here no being without an animal body had a right. His body shook with hurt and wounded pride. No words were necessary. That cry—if it had come from the strings of a violin he could not have understood it better.

He thought of the plot, of the quick, electrical death that would devastate the world of these barbarians. He looked upon the beauty

of the girl, felt his body vibrating to the fear and horror in her. He did not have a heart; it could not burst. But something musical and simple in that soul was tearing at his feelings, ripping and wounding him like a violin cracked and torn by its own vibrations.

The girl, then, had not known of these strange beings? So horrible they were, in the sight of the barbarians, that she could not stand their sight!

Stepping back into the deep shadows, he played one more piece, one filled with such pathos and depth, played with such mastery, that Edith Conklin was to remember it all her life. At the very end, he paused.

"I, too, have been a barbarian, beautiful one." He spoke simply, with great feeling.

Then, tearing out from beneath his bow, like the hordes of Attila, came a cascade of fearful, ravenous notes. They smote the sides of the room. The ceiling shook, and the lights burst in their sockets. The windows were smashed. Out and over a courtyard, out into space, into the laboratory and seeking the glass covering of the country of supermen, the notes thundered. There was the terrific crash of acres of breaking glass. There was the brief sigh that might come with the death

of thousands of dying minds, minds killed by physical shock.

AT LAST, there came a single note, sharp and clear and terrible. Straight to a control lever of a particular metal pointed out by Conklin in his explanation of the superman world atmosphere it flew. Its vibrations were the precise opposite of the metal. Like an invisible hand, it jarred the lever controlling the death-ray flow loose from its contacts. The flow was stopped, would not spread out through broken glass to harm the human world.

Or so it must have been. For that was the way Conklin found it. And later found the Violinist himself shaken to metallic bits. The Stradivarius lay carefully on the floor beside his terrified, sobbing daughter. Alone, of all known vibrations which his body could not absorb and vibrate to, that note of terrified fright from the beautiful girl had broken him to pieces.

In contact with the vibrations of hurt and wounded love which shook his being, that note had clashed, rending him to bits. For the strain of the Violinist family had taken no account of the terrific vibrations and oscillations of human love. The last remnant of human emotions, living in music like a dying echo, had broken the last of the supermen.

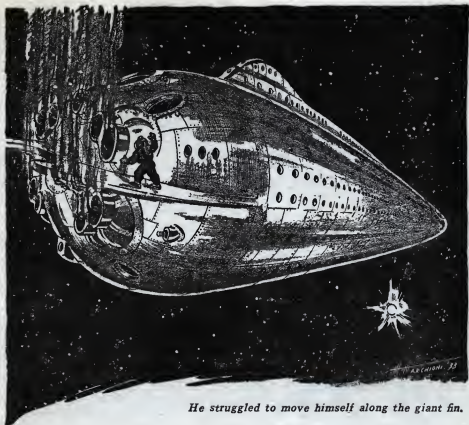
Next Month:

## BLACK DEATH

by

Henry J. Kostkos

Brings a new and startling thought  
to super-science fiction. Don't miss it.



*He struggled to move himself along the giant fin.*

# Space Flotsam

by Raymond Z. Gallun

*Illustrated by M. Marchioni*

**I**T IS HARD to die at eighteen, particularly when one is healthy and full of the adventurous joy of living. Hal Trilbey tried to grin bravely as they pushed him toward the airlock of the space ship, preparatory to thrusting him into the vacuum of the void; but, against his will, his lower lip trembled, and his freckles stood out very plainly upon his pallid cheeks.

"My God! No! Not that!" he choked. "Give me the protonic blast instead, if you've got to kill me! Please! I can't! I can't!" Trilbey seemed only a scared little boy.

Corad, the Venusian, however, could not be moved. "Men of Earth were ever the bold aggressors," he said in a hard voice. "Their audacity is terrifying. They take what they want without consulting any one.

But sometimes they go too far. Spies will always find a ready and appropriate welcome aboard the ships of Corad of Mekalla. And that you may think about and rue your treachery the more, I shall put in your space armor a ten-hour supply of oxygen."

"I'm not a spy!" Trilbey denied emphatically. "You sent undercover agents to gather Earthian recruits at Ferathe, didn't you? I joined for fun. And I only went near the brig of the ship to see Lonnie, because he's sick. I don't want your secrets! I don't!"

His protestations, however, were useless. Lothan, Corad's chief henchman, wore a sadistic grin on his goblin face as he fitted an oxygen helmet over Trilbey's head and clamped it to the metal collar of the space suit which he had previously been forced to don.

The inner valve of the airlock clanged open. "Good-by, my young friend!" said Corad mockingly, as the squad of Venusians thrust the youth into the dividing compartment. "And may the devils of space find you good company!"

The air-tight metal panel rang hollowly like a coffin lid as it closed upon Trilbey, shutting the derisive chatter of voices and the hum of busy machinery from his ears with terrifying abruptness. Then the outer door of the airlock opened, and the steel evacuating arms, used to cast off sacks and bundles of refuse, slid out of their concealing sockets in the wall, clutched him and thrust him forth.

With fingers clawed inside his clumsy space mittens, Trilbey made a desperate effort to cling to the side of the vessel. But there was nothing on the craft's smooth, eighteen-inch armor of dural steel that offered the least hold, nor would it have been

of any use to Trilbey if there had. A dry sob rattled in his throat as he toppled clear of Corad's ship and floated free in the ether. He was an outcast, a living dead man.

His body began a slow, monotonous, end-over-end rotation which might conceivably continue for millions of years, until some cosmic force did destroy the withered mummy that would be all that would remain of him, for in the void there is no friction to stop motion once it is initiated.

The stars of space, gleaming with a cold, inscrutable steadiness in the black sky, which spread with terrifying vastness in all directions, rolled about him with hypnotic regularity. The furious Sun of the void, wabbling across his field of view at even intervals, stabbed painfully into his eyes, shielded though they were by the thick view windows of darkened glass set in his oxygen helmet.

There was no sound except the rasp of his own breathing and the throb of his pulse beating a death march in his temples. He was floating a hundred thousand miles from any well-beaten space lane, and twenty million miles from a habitable world. His chance of living beyond the ten-hour span which Corad had doled out to him for further punishment was exactly nothing.

YOUNG TRILBEY'S mind was not quite clear. In a sort of foggy wonder he kept his gaze fixed on Corad's craft. It had slipped a little ahead of him, fifty yards perhaps, without making any further change in position relative to himself. Still, its speed, and his speed, too, would have been measured in miles per second; but here, where all was emptiness, with no near object

by which velocity could be judged, there was no sense of motion.

The vessel was going at the same speed and in the same direction as the man. It was just gliding along by momentum alone, as space ships usually do when they are away from the retarding influence of a planet's gravity. It was not getting any appreciable assistance from its propulsive mechanism.

Blue vapor boiled lazily from the vents of its rocket motors, like the smoke from a sleepy volcano; and the sun made prismatic hues ripple and play in the frosty particles congealed out of the exhaust gases by expansion and by the absolute cold of space.

This battleship of Corad's, the *Torool*, was a huge vessel, fully a thousand feet in length, and armed in proportion. It was one of the fleet by which Corad entertained a by-no-means-impossible dream of a solar system at his feet.

Its towering bulk of glistening metal, however, and the scores of protonic blast guns and torpedo catapults that lined its sides, didn't impress Trilbey now. Instead he was vaguely angry at it, wishing that now that it had dropped him, it would pull away from him and leave him alone.

A sullen resentment was rising within him, a bitterness at everything, and particularly at himself. He had never been what a fond mother could call a good boy, not that he would have cared to be stamped with such a stigma; but always his lust for adventure, his yearning to probe new mysteries, and something fiery and rebellious within him, had led him to trouble.

Mostly it had been trouble that afterward could be laughed at and genuinely enjoyed. But there had been a gradual tendency toward

more and more serious difficulties, leading ultimately and inevitably to disaster which had now come upon him.

With Lonnie Shannon it had been the same. When they were but fifteen years old they had boarded a decrepit old space tramp and had skipped for Mars. They had learned what there is to know about the hot, reeking rocket hold of a hurtling ship of the void. They had visited the workshop cities of the red planet, buried a thousand miles below its surface crust, hugging the still molten core which furnished the energy that kept the huge machines of the wizened little Martians functioning. They had watched the giant-belted disk of Jupiter rising over the sullen seas of the Jovian satellite, Ganymede. They had visited the mines of the Moon, boring deep into the rays of white sand which extend star-wise from the crater, Tycho.

Thus they had used up a year and a half. Trouble and pleasure and fun had been mixed into a fascinating medley. There had been the time when, at Ilaah on Mars, Lonnie had had a fight with a Ganymedean and had bitten the tip from his long, tubular ear. There had been the time when he himself—but no need to go into detail.

At last they had gone into training for the space-patrol service at Farathe, Venus. But in spite of the aptitude of both of them for wielding the delicate controls of the slender needles of speed and power that were the patrol boats, they had never seen active service. They had not got that far.

Resentment toward authority, which is, and must be, one of the pivots of civilization, had been their undoing. The two fiery young ne'er-do-wells had concentrated their dis-

likes upon a dapper and youthful captain of recruits named Joseph Maddox, who was to them the totem and symbol of that authority.

And so, with serious difficulties pending because of their misconduct, they suffered no qualms of conscience at the prospect of deserting when an agent of Corad, the Venusian, came, whispering sedition and revolt.

One night they had slipped away into the steaming Venusian jungle and had gone to Corad's headquarters, Mekalla, hidden away in a narrow valley in the heart of a mountain range. Here Corad was building his battle fleet and amassing his forces for the attack on the solar system. Corad's scientists were working on new means of inflicting wholesale death—deadly diseases which only the heat and moisture of Venus could spawn.

Shannon and Trilbey had known something of the extent of their new master's ambition from the beginning, but the details of his plans were, of course, hidden to them. They were trained for their parts. The fact that they were Earth youngsters would enable them to do many things which a Venusian could not do without arousing suspicion.

One of the tasks to which they were assigned was the placing of quantities of clear fluid into the sources of drinking water on Earth and Mars. The purpose of the fluid was not explained to them, but it was not difficult for them to guess that the stuff possessed lethal qualities.

AT LAST the voyage of the lone *Torool*, the largest and best armed of Corad's ships, was begun. Mars was to be visited first, for Corad intended to drop some Martians, who were in his service, there. Then, on

the return, Lonnie and Trilbey and other Earthians were to be landed secretly on Earth.

The trip had been fun at first for the boys, but then Corad's ship had run down a freighter, and Lonnie Shannon was treated to the sight of an Earthian being slowly cut to pieces by a group of leering Venusians. That was enough to stir up in him deep-hidden qualities which the thin veneer of radicalism, which he thought was his guiding force, could not cover. Lonnie's outburst of curses and denunciation had caused him to be cruelly flogged and imprisoned.

And it was only a few hours later that Trilbey had sneaked toward the brig where Lonnie, sick and lacerated from the beating he had received, was locked. On his way he had peeped into the blue-lit room of secrets where Corad's scientists were at work on their poisonous serums. That part of his act was innocent enough, even though he had felt previously the mysterious fascination of that laboratory. But he was seen; his motives were misinterpreted, and now he was only a bit of flotsam floating in the ether.

In a brief moment these things came to the surface in the whirling chaos of Hal Trilbey's mind as he stared up at Corad's ship, blotting out the stars before him.

His bitterness culminated suddenly in an outburst that was defiantly pathetic. His freckled face twisted into a grimace that was like that of an angry and tearful child.

"Hell with 'em!" he screamed, and his voice echoed painfully inside his oxygen helmet where no one but himself could hear. "Hell with Corad! Hell with Earth! Hell with 'em all! It's better to be dead!"

It wasn't better to be dead, however. Hal Trilbey was too healthy



physically for him really to accept such a philosophy. The instinct of self-preservation was planted deeply within him, so deeply that almost without knowing it he was casting about for some means of saving himself, where such means did not exist.

His first reactions were purely instinctive and automatic. Like a drowning beast he clutched with hooked fingers toward the space ship, which had drifted imperceptibly away from him, and now stood almost broadside to his position. It was quite out of reach, and even if he were able to touch, or even cling to its gleaming hull, what would it avail him? Death would reach him just as surely as it would while he were floating free. Certainly he could not penetrate its tough armor of dural-steel and win his way to the life-giving air inside.

He did not, and could not, however, think of such things now. With his arms working and his freckled face contorted into a grimace of effort, he sought to swim through the ether between him and the *Torool*. But the empty vacuum offered no resistance, no traction to his whirling limbs, and his efforts were entirely useless.

And then he had an idea.

Fumbling feverishly, his fingers impeded by his space mittens, he loosened the straps which bound his magnetic boots to his feet. The boots were of heavy steel, magnetized to afford the wearer a means of staying in contact with the steel decks of a space ship when it is traveling the void, where gravitation is lacking. Tearing one boot free, he hurled it with all his strength in a direction opposite from that where the *Torool* floated. The reaction, or "kick," which resulted from the throwing of the object started him drifting slowly toward the vessel.

The other boot followed the first, and added slightly to his gradual drift. He had nothing else to throw—nothing but the six flasks of precious oxygen fastened to the back of his space suit. But, without hesitation, he hurled five of them away.

Thus he reached the stern of the *Torool* and drew himself upon the upper surface of one of its huge horizontal guide fins. But here he hesitated; it seemed that he could go no farther. He looked at the gleaming form of the space ship in the same dazed, uncertain manner which a deer pursued by wolves might show when it looks up at the unscalable walls of a gorge in which it has been trapped.

Then his gaze came to rest on one of the huge rocket vents, from which propelling vapors poured idly. Only two of the six vents, flaring wide like a dragon's nostrils, were active.

His attention centered on one of these two, and all of a sudden a grim smile flickered on his boyish face. He was an outcast, but between his two enemies there was still a choice. It was not safety for himself which he was thinking of; it was only a practical joke which had occurred to him—a grim and ghastly joke on Corad of Mekalla.

TRILBEY glanced quickly about. Had his presence on the guide fin been noticed from any of the windows of the vessel? He had no time to waste on such speculations. He had to use his opportunities at the moment when they were offered.

Quickly he tore one of the detachable metal railing posts from the little observation platform at the center of the guide fin; then he lowered himself toward the spewing rocket vent. Hal Trilbey knew things about the propulsive mechanisms of space craft. And because he knew,

he chose an active vent for his attentions, for the inactive ones would be blocked by huge valves.

Without hesitation he threw himself straight into the blazing maw. The heat was terrific, but for a minute or two his space suit, with its quadruple layers of vacuum compartments, would resist the high temperature in the same way that it resisted the absolute cold of the void.

If the rocket had been operating at anywhere near full capacity, he would have been blasted and fused to nothingness in an instant, for at full tilt a rocket motor hurls its white-hot exhaust gases at speeds in excess of a hundred thousand feet per second. But it was idling now, and the force of the escaping vapor was little more than that of a very strong blast of air.

Hal Trilbey's goal, however, was the very vitals of the rocket motor. Fighting the pressure of the exhaust, he raced forward down the long, throatlike passage, which extended into the bowels of the *Torool*. All haste was necessary. Even now he could feel the heat seeping through his armor to his body. It would not be long before the outer shell of his space suit would fuse and drip away from him, as though it were made only of ice. He advanced fifty feet, and then the out-rushing blast seemed to grow stronger, and he could make further progress only by dragging himself along the scorching metals on hands and knees. But at last he reached the huge capsule-shaped chamber where the propulsive holocaust of the *Torool* originated.

The scene showed dazzlingly through his darkened eye windows. All but two of the six openings leading to the vents were closed by mighty valves. Down the center of

the chamber, pairs of thin black pipes with nozzled tips converged together. And between each pair was suspended the ignition arcs from which came the powerful electric current necessary to release the terrific stores of energy locked in the radio-active fluid which sprayed from the nozzles.

Only two pair of these nozzles were feebly active now. "Feebly" here is a comparative term, for already Trilbey was weak from the heat that was beginning to scald his flesh. The air he breathed in his helmet had the cindery smell of scorched metal.

Nevertheless, he went feverishly to work. One of the active electric arcs he smashed with the iron bar he carried. The electrodes of the other he turned apart so that the circuit was broken. Then, with all the fury of his expiring energy, he went staggering down the line of nozzled pipes, swinging his bar with fiendish blows against the tips of the fuel ducts.

The brittle tips, made of a carbon preparation to resist the terrific heat, snapped easily under his wild onslaught, and from the broken ends gushed a torrent of rocket fuel, pouring on the floor and collecting there in a swiftly growing pool which represented a colossal amount of potential energy—far more than even the stout walls of a rocket motor could withstand at one time.

Things crowded in an odd jumble into Hal Trilbey's brain as he groped toward the fiery arc which he had disconnected: the interesting little things which belonged to his past life; the first time he had clutched the controls of a space boat when he was at the training station; the thrill of it; a snatch of song which he couldn't quite remember; Lonnie. Lonnie was as good as dead already

in Corad's clutches. There was nothing he could do about it.

"For Earth!" he grated savagely between clenched teeth, as he moved the electrodes of the arc together. He did not see the flash as the electric flame leaped across the gap, for things happened too rapidly for his retinas to follow.

An hour or so later the slender needle of a space-patrol boat came hurtling, like a beam of light, across the void. The watch on a lumbering freighter had seen a great ball of green flame drifting through the ether, and had radioed the information to the nearest patrol station.

IN THE CONNING tower of the police craft, a dapper young officer clad in an immaculate white uniform worked calmly and quickly over his controls. Beside him, a wizened little Martian with a deep voice was peering through the eyepiece of a telescope. The objective lens was directed toward the green flame, which loomed ahead.

"It is a ship, Joseph Maddox!" the Martian rumbled. "A battleship! The rocket fuel is exploding! I can see the name of the ship. It is in Venus characters on the prow. The *Torool*! It is Corad of Mekalla's flagship! Corad himself is aboard, for only an hour ago he radioed bold threats stating that if his demands were not met he would spread an improved form of Venusian relcathe disease among the peoples of Earth and Mars. And the threats came from the *Torool*, for insolently he gave the call number of the ship."

Captain Maddox's jaw tightened grimly as he shifted a tiny lever. The speed of the space boat decreased perceptibly. "Then we must be careful, Roorark," he said slowly. "If there is but one protonic blast tube in order, be assured that Corad

will use it. We wouldn't have the chance of a dust mote in the sun if that dreadnaught of his was in anywhere near normal condition. It's armed to the teeth, and it can outrun any patrol boat in this space area."

As they approached the blazing wreck more closely, however, it became apparent that caution was not needed. The *Torool* was nothing but a blasted wreck. Showers of sparks and drops of molten metal plumed away from it as fresh explosions of green flame burst inside the shattered hull.

"Nothing could live in that holocaust, Roorark," said Captain Maddox. "And we're lucky. The whole planet league is lucky. Corad's conspiracy could have thrown the entire solar system into chaos. I've seen ordinary Venusian relcathe, Roorark. It's a fungus that can eat the bones from a man's body in a week. Improved or not, it would spread like wildfire. We've been trying to bring Corad to terms for months, and now a fortunate accident, a simple failure in the propulsive mechanism of his ship, wipes him out. Without his guidance, the conspiracy will fall to pieces."

"Heah! Joseph Maddox!" Roorark affirmed emphatically. "And if those few of your native people of Earth had not been disloyal, perhaps Corad's conspiracy would have been an empty threat."

Maddox smiled wryly. He was thinking of Lonnie Shannon and Hal Trilbey, who had been under his command during the period of their training for the patrol service.

"Yes," he admitted.

No one could have seen the shattered fragments of a man that had been hurled from the exploding motors of the *Torool* when Corad of Mekalla had met his end.



*With enormous acceleration, the car hurtled up that mysterious beam.*

# LOST CITY by HARL VINCENT of MARS

*Illustrated by  
Howard V. Brown*

## *A New Adventure on the Ruby of the Skies—Bizarre, Startling*

THE TWANG of a torpedo-projector broke sharply into the dryland silence. A mournful whine rose swiftly to a shriek as its winged missile split the air. Two men flung from their mounts and flattened to the hard-packed sand. Immediately came the shattering detonation of ultranite only yards away, the heaving of the desert floor beneath them, and a deluge of stinging particles.

One of the men, a slim and wiry Earthman, floundered out of the swirl to grasp the bridles of the jikiris. These tough, burrolike animals of the Martian drylands stamped and yapped in panic. A firm hand and soothing words were needed to calm them.

The other man, a big, coppery-skinned Martian, heaved up with his own projector unslung. Keen black eyes scanned the bleached wastes behind. Thinking he saw movement in a clump of purple brush a half mile to the rear, he let loose a torpedo. The clump vanished in a geyser of sand that gleamed white for an instant in the weak sunlight and was gone.

"Imps of the canals!" growled the Martian. "I don't know if I got him or not."

The Earthman showed two rows of gleaming teeth through the stubble of red beard which had been lengthening for many days. "Him

or them?" He grinned. "Still think we're dealing with spooks?"

His companion lighted a cigarette and inhaled deeply. "Seems like there's no other explanation," he said blandly. "Fact is, this whole business is more mysterious than I care to admit."

The other's grin faded, and his gray eyes were solemn as they scanned the horizon. For a matter of minutes he made no reply.

These two, Martian and Terrestrial, were friends since boyhood. Schooled together in Risapar, capital of the Canal Cities Union of Mars, they had fought each other's battles, right or wrong, for many a year since. With the development of space travel that came in the twenty-second century, they embarked on adventures which followed without number, and neither was a stranger to strange quests in strange places.

This, however, was the first time they had penetrated together the forbidden provinces of the Martian drylands.

Ridge Coler, the Terrestrial, had been a boy among the first of Earth adventurers to settle in the canal cities of Mars. And were it not for Kal Turjen, the Martian, he would have had a sorry time in the new environment.

The present venture was out of their usual line. Both had hearkened

to the call of outer space as men before the days of ethership travel had hearkened to the call of the sea. Coler, the pilot, and Turjen, the engineer had been known to the ships of interplanetary lines through many a dangerous voyage.

A message, however, had come to Kal Turjen from out of the past. His own sire, whose memory to him was exceedingly dim, was reputed to be alive. Long years before, he had gone in search of the legendary lost city of the drylands and had never returned. There were tales in the meanwhile, tales that came to Kal and his mother from the mysterious forbidden provinces, tales of a bronze giant who had showed up during reappearances of the lost city.

These, however, they thought were excuses of the witch doctors or fabrications of the dryland bandits. No upper-caste Martian ever had seen the lost city; no scientific expedition had been able to locate it. Still there were things that could not be explained; that black magic was practiced in the far reaches of the desert was well known to most Martians; or at least believed.

Now there was something definite. A letter, unmistakably in the hand of the elder Turjen, and with cryptic instructions, had arrived.

"UM-YES," COLER admitted after a long silence. "There are some queer things we can think about. The message itself, and the way it was delivered; the map, whose lines can be seen only in the light of Phobos; this torpedo bombardment by unseen assailants. I'm a bit squirmy about it all myself."

With their jikiris once more under them, they pushed on toward the sunset. The bleached sands

gave no evidence of life in any direction. Nor was the level monotony of the desert broken by so much as a hillock; there was only the flat whiteness and the purple brush—desolation.

Night came swiftly.

Then Phobos, inner satellite of the red planet, rose up from the western horizon and cast long, eerie shadows behind them; grotesquely bobbing shadows of animals and riders. Other shadows made of each brush clump a lurking place for theimps of dryland legend.

Kal Turjen drew a crackling parchment from his breast pocket. "It is the ninth moonrise," he said. "According to the message there should be a sign."

As always happened under Phobos' rays, the carefully drawn lines and circled landmarks of the chart stood out in brilliant green. The Martian indicated a large blank area within a triangle of crosses.

"We're here now," he said. "I'll lay a bet we're not more than a mile from the spot."

"But where's the sign?" objected Coler. "I've seen none."

"Nor I." The Martian jerked up his head and peered into the night as if to pierce the age-old veil of the forbidden provinces.

One of the jikiris set up a plaintive yapping.

"Jupiter!" exclaimed Coler. "Look—on the map!"

Within the cross-marked triangle a tiny flame danced, an orange flare that leaped up from the parchment yet did not so much as scorch it. The jikiris howled in unison.

Though he had scoffed at tales of dryland magic since his youth, though no slightest superstitious notion had ever entered his fiery-thatched head, Coler was more than a little taken aback at sight of this



weird light that blazed before his incredulous eyes.

Here was a phenomenon that could be explained away by no theorem of Martian or Terrestrial scientists; here a demonstration of the very black arts to which Kal had so often referred—sheepishly in the face of his own light banter, but with obvious conviction.

Coler blinked when the flame slithered off the chart to the white sands and went lurching out into the desert night like a thing alive.

Kal's jikiri bolted suddenly, its doglike yapping rising to a mournful tremolo and its sleek bullet-shaped head thrust down until almost between the thrashing forelegs. The Martian shouted something unintelligible, and Coler jerked his own frantic mount into a mad chase of the other.

A strange change, however, had come over the drylands in that moment of confusion. The light of Phobos had dimmed to a ghastly pallor. Off in the distance was the dancing flame, larger and brighter now, and moving with incredible rapidity.

Where there had been only level plain before, there was now a sharp declivity. The sand was no longer hard-packed under the hoofs of the jikiris but was soft and loose, slipping away beneath them. Beasts and riders were tumbling into the depths of a vast crater that had opened up before them. And the dancing flame still led the way.

Strangest of all was the swift movement of the sand, like that of a whirlpool. Coler drew the back of his hand across his eyes in an impatient gesture. Was he tricked by the light of Phobos here in the drylands? Of course it could be no more than an optical illusion, this seeming plunge into a vortex of

whirling sand, this maelstrom whose sides grew ever steeper and whose energies were swallowing them up.

Abruptly his jikiri pitched forward and was lost in an avalanche of sand. He was hurled headlong down the slope.

Of the remainder of the descent he had only confused impressions.

WHEN NEXT Coler was fully cognizant of his surroundings, he saw he was in a lighted chamber with smooth, metal-walled sides. Kal was there, unhurt, staring agape at a figure that sat cross-legged and still, like a carved god of the ancients, but whose pale eyes were alive and regarding them intently.

With a start, Coler observed that the chamber was at the bottom of a gleaming metal tube, a vertical bore whose upper end was open to the star-studded heavens. He lurched to his feet.

The cross-legged one spoke then, in syllables of classical canal-cities speech. His voice was mellow, his smile friendly.

"Well done, most worthy son of Turjen," he intoned. "And you, white man from the third planet, well done, I say."

"We came in answer to the summons," Kal said simply.

Sensing the reverent awe in his friend's voice, Coler said nothing.

The man who had greeted them was undoubtedly a Martian, though his skin was of deeper copper hue than that of the most aristocratic of the canal-city dwellers. He was of magnificent physique and was naked save for a loin cloth and sandals. Three interlocking circles were tattooed on his broad chest. 'It was at these that Kal was staring.'

"I am Jor Therol," their host went on. "Here to receive you and to transport you to him who sent for

you. But first there is work to be done. You were followed."

The hidden lights of the chamber snuffed out suddenly, and the place was in Stygian gloom. Coler tensed his muscles in expectation of a surprise attack, though he could think of no reason for treachery on the part of the stranger who called himself Jor Therol. He heard Kal's breath sucked in sharply and then saw a luminous rectangle in the floor at the crossed feet of their host.

It was as if the rectangle were a shallow vat filled with liquid metal; mercury, Coler thought at first. But the metallic liquid shone with a rosy glow. And, somehow, the glow was alive, pulsating with energy that promised curious revelations. As he watched, there rose from the gleaming surface a mist which formed figures in relief. A section of the desert they had left behind was pictured there and moving forms that skulked near a large clump of the purple brush.

"The brigands who pursued," Jor Therol whispered. "They are now within range of our destroying powers."

Coler saw the bearded, chalky-skinned faces of dryland rovers of the fiercest sort; saw that each of the bandits was armed with a long range torpedo-projector; saw their leader scrutinizing the horizon through powerful night glasses.

And then there was the throb of massive machines in some hidden recess below the metal-walled chamber, a crackling of the dry air of the place as if it were highly charged with static electricity. That part of the drylands which was pictured in the luminous rectangle was swept by a roaring white heat that sprang out of nothingness and was gone as abruptly as it had appeared. Where the bandits

had been was only an expanse of blackened sand with half a dozen or so of shrunken mounds smoldering.

The lights in the chamber flicked on, and Jor Therol looked up with solemn gaze. "No man must find this place excepting he who is chosen," he said. "Come, friends; we go now to Scarta."

He rose to his feet, and Coler saw that he was a full head taller than Kal Turjen, who was himself of unusual stature in a land of stalwarts. But the Terrestrian gave little thought to the splendid brawn of the man or to the majestic dignity with which he moved. He was recalling the ancient history of Mars as he had studied it in boyhood. That last word of Jor Therol had brought it all to mind, and he was groping for an explanation.

"Scarta," the man had said.

Scarta! City of power and of wealth ten thousand years before; citadel of the mad emperor, Zaraf, and scourge of a civilization which had died and was well-nigh forgotten; and in no way connected with the later, though still ancient, tales of the lost city of the drylands.

## II.

AS JOR THEROL led the way from the chamber, Coler was thinking deeply, searching amidst contradictory remembrances as well as real scientific determinations for enlightenment.

His mind was a chaos of emotional thought. The strain of the past nine days of travel in the drylands was telling on him, yet he knew he was better able now to analyze the queer happenings of the nightmare journey than was Kal. His Martian friend was in a daze—any one with half an eye could see that—and it was a foregone conclusion that some

hypnotic influence of their strange host had him in its power.

Kal Turjen was no weakling; the Terrestrial had been through enough of grief in his company to attest to that fact. But here was a situation the like of which they never before had encountered.

When men are fatigued and weakened by hardships such as those these two had met, they are prone to exaggerate and ascribe to the supernatural any phenomena out of the ordinary. This Coler was determined not to do. All they had seen, he now realized, was explainable on scientific grounds; the map itself was merely drawn with some photochemical ink which was active only under certain rays of Phobos' spectrum; the guiding flame was a radio-controlled beacon of Jor Therol; the vat of metallic liquid a development of television or optophone principles; the destruction of the bandits only a utilization of powerful infra-ray radiations. No demonstrations of black magic were these.

And yet there was the delivery of the message and the map—in a dream of Kal's. The voices they had heard in the drylands. The formation of the whirlpool of sand in what had been a plane and undisturbed surface. Coler gave it up.

Jor Therol's reference to Scarta was another matter. Whether it was only a coincidence that he had named the city of a hundred centuries before remained to be seen. Certainly the man himself was a reminder of what the histories had portrayed as the beings of a golden age that ended with the coming of the droughts which left the red planet a barren waste for thousands of years. But that this should in anyway be linked with the dryland myths of the lost city was absurd.

Or that the elder Turjen had been wrong.

"We are here," said Jor Therol.

Coler saw that Kal Turjen was still walking stiff-jointed like a man in a trance.

They had come out into a large cavern which was below the chamber they first entered. Here there was an amazing assortment of mechanisms; machines that made Coler think of the generating apparatus of one of the largest etherships of interplanetary lines and yet were different; different in workmanship and material, different in design, and different in function. The resemblance was there, but it was cloaked with a mysterious unfamiliarity of electrical connection and distribution, and a suggestion of antiquity that came as a distinct shock to the Earthman when he realized what it was that had struck him about the complicated assembly.

Kal, he saw, was vacant-eyed; unseeing; unknowing.

"Look here!" exclaimed the ex-pilot. "What's wrong with you, big boy? Has this Jor Therol—"

His words ended on a constriction of his throat muscles. For the first time the Terrestrial was aware of a flashing light in the hand of Jor Therol. An arrangement of revolving mirrors, it seemed to be, mirrors that whirled and interlaced, reflecting swift flashes into the eyes of the beholder; glints that struck into his brain with monotonous regularity, causing his lids to flicker over his eyeballs in synchronism with their movements, numbing his senses.

In a moment he was helpless to move without the controlling of a voice that whispered in his consciousness from some vast distance and yet was recognizable as the voice of Jor Therol. He was an automaton, as was Kal, utterly sub-

ject to the will of this pale-eyed copper giant from out of the past.

Coler fought against this thing he knew to be mechanically induced hypnotism, fought it with all the strength of his will. But to no avail. And, regarding Jor Therol through the haze which blurred his vision, he could not bring himself to believe that any malice was behind the use of the force. It was something considered necessary by those who had sent for him and Kal, something that was required in the interest of their own and others' safety.

The thought came to him without volition—perhaps it was communicated from the mind of Jor Therol through the medium of his flickering mirrors—but it brought with it a feeling of satisfaction with things as they were and a cessation of his vain strugglings against the mastering force. He began to take note of his surroundings once more.

"Seems like — everything — is O. K.," said Kal jerkily.

Coler nodded. His own lips refused to form words.

Jor Therol had stepped to a switch that stood out from the wall and on which numerous controls and instruments were arranged. He closed a switch, and the rising whine of a huge generator answered the movement. The room, which was a veritable power house, throbbed to the vibration of heavy machinery.

Above them was the yawning breach of a cannonlike tube which extended in a vertical direction. Below this breach was a pointed cylinder of metal in whose side was a door. It was a car of some sort, and it was so mounted as to be susceptible of insertion in the breach of the tube above its nose. A rising platform was beneath, and a huge coil of copper tubing encircled the tube-end directly overhead.

Jor Therol applied his eye to a telescope that ranged alongside and grunted his satisfaction. Coler saw the light of Phobos strike down on a viewing plate that was attached to the telescope, and he knew in that instant that the inner moon was their destination.

"But," he gasped, in answer to the thought which must have been transferred from the mind of Jor Therol, "Phobos is a barren body; its surface is of volcanic material, smooth and unbroken, incapable of supporting life. There is no atmosphere, and dangerous radiations from the body make approach in a space ship impossible."

The copper-skinned giant smiled. "You will enter the car," he announced. "Knowledge will come to you of the true nature of this moon which has been such a mystery to the scientists of recent ages."

As if propelled by unseen hands, they entered the car.

The interior of the projectilelike vehicle was padded thickly and was provided with oxygen apparatus. But no propelling mechanism was in evidence. Jor Therol, following them inside, closed and made airtight the door, then spoke softly as if in answer to the objections which had presented themselves in the minds of his guests.

"Phobos," he said, "is all you say — on the surface. We go not to the surface, however, but to the interior of the body, where is to be found the city of Scarta. This car in which we ride is driven through the tube by magnetic forces and thence over a beam of radio impulses to the receiving tube at Scarta. Hold fast now, my friends. We leave."

The car flung upward with a violence that flattened them all to the cushions. The pressure was unbearable as it accelerated to a terrific

velocity. Almost instantly the small compartment became insufferable from the heat of atmospheric friction. Coler panted, tried to raise his head, but could not move it. His eyes burned in their sockets. Something snapped in his brain.

THERE WAS no blankness like that of insensibility, but a sudden and complete relief from bodily discomfort and a lassitude of mind such as might be produced by an opiate. Coler found himself enjoying the sensation. He had no further desire to move and would not have tried to do so even if the pressure of acceleration had eased sufficiently to make it possible.

Jor Therol talked, and his words, spoken like a benediction, made clear some things which had been perplexing, though confusing others.

"Scarta," he told them, "is indeed the city of ancient days in a world that has known her not for many centuries. She is populated to-day with the very humans who brought her to her fullness of glory in the time before the great disaster to the planet Mars. It may be you will find this difficult to believe, but the scientists of old Scarta had learned many secrets which have since been lost to your history; they discovered the formula which makes youth and life eternal, and they treated all Scartans with the requisite energies before the great drought depopulated the rest of the planet.

"For generations Scarta continued to exist in the midst of a barren land, that which is to-day called the drylands. After a time the Scartans found that a new civilization was springing up, that hard-dying humans had managed to survive and to propagate the species, that they were engaged in constructing the

network of canals which to-day exists and makes life possible to millions of the dark-skinned race which was the offshoot of their own. But they remained aloof.

"Meanwhile there was another development, the advent of a race of chalky-skinned folk of the desert lands; a race which came into being by cross-breeding and evolution of certain lower forms of life which had likewise survived the great disaster, the race now known as the drylanders. These became troublesome, and the Scartans decided to remove their city from the planet they had so long inhabited.

"They excavated and in the excavation built a huge, hollow sphere of fused silica and other fusible materials of great strength, in which sphere the ancient city of Scarta was incorporated. They provided the sphere with mechanisms and energies that made synthetic food and drink forever available. They had long since ceased tilling the soil and making other efforts to wrest their bodily necessities from the barren wastes surrounding them, so this was no hardship. The sphere contained its own atmosphere-producing apparatus and everything needful for the maintenance of lives that would go on forever so long as ordinary needs were provided and no violence was encountered.

"In addition, there were huge force generators in the sphere and these generators produced energies which lifted the sphere and the inclosed city from the desert and hurled it into the heavens. It took up a position, when its initial velocity had been expended, slightly less than six thousand miles from the center of Mars. And there it has revolved ever since, the satellite you call Probos in the tongue of the third planet.

"Zaraf still rules; the ancients still live—most of them. New blood has been injected only by the few births permitted to replace those of the ancients who have died by violence or accident and by the few newcomers who have reached us. It is with this new blood—and with other things—that we have to deal to-day. There are troubles and dangers; factions, and serious differences; Zaraf's ambitions. The situation is grave indeed. Had this not been so we should not have sent for you; but here we are."

Coler had not noticed the deceleration of the car, so absorbed was he in Jor Therol's recital. Now he saw they had slowed in a speed where he was practically weightless, a speed which was only that of a body falling freely in a gravity field.

Kal Turjen sat up on the cushions and grinned. A touch of his finger moved him from the padding, and he turned over ludicrously in the air, unsupported. His first act, when he recovered his balance, was to light the inevitable cigarette and inhale deeply of its smoke, exhaling noisily and luxuriously.

The hypnotic influence had entirely worn off.

A panel in the floor slid back, revealing to their gaze the surface of the body toward which they were falling. Phobos, silent and barren, showed no sign of habitation. Viewed many times before by Coler and Turjen from etherships, but never considered as other than a desolate and uninteresting globe, it now assumed a new significance.

Jor Therol busied himself with a small mechanism, and a beam of scintillating green struck down from the car to spatter against the swiftly rising surface. Immediately a black circle showed where it had contacted; there was an open-

ing through the wall of the satellite. In a few minutes their car slid into its airlock and came to rest.

### III.

THE MEN came out in a room whose floor, walls, and ceiling were luminous and yet were opaque to the source of light. It was a cool, milky radiance that bathed them, brilliant, and casting no shadows. Eerily, it brought the sensation of walking in a sunlit cloud. The gravity here was slightly less than that of Mars.

Jor Therol opened a door, and they entered another room where two Scartans awaited them.

"How goes it with the master?" he inquired.

One of the bronze giants answered solemnly, "His soul has fled, oh, Jor. The time was too long."

"Bas Turjen is dead?"

The two nearly nude Scartans bowed to the waist with arms spread wide in a reverent gesture.

Coler saw Kal Turjen's jaw muscles tighten, saw his black eyes flash fire. But Jor Therol's hasty explanation cleared the air.

"Your respected sire," he told Kal, "has succumbed to his infirmities. Unfortunately, he had refused the treatment which would have made of him an immortal. But his work as our leader may now go on as he planned—with you as his successor."

Kal's jaw dropped; he could only stare and gulp. He had scant remembrance of his father and could hardly be expected to mourn him deeply now, but the revelation was so sudden and the implication that he was to succeed in some important leadership so unexpected as to unnerve him for the moment. Coler saw him fumble for his cigarette case and pocket flame spouter.



At last Kal Turjen stammered "Could—could I see him?"

Jor Therol shook his head regretfully. "Unfortunately, no. The custom here is to send lifeless bodies out into the preserving cold of space immediately the soul has departed. To you this comes as a blow, but his written wishes are here, and memories which shall be revealed to you in good time. We, his followers, are assured that you, his son, are worthy to carry on in his stead."

"Seems like I'm elected," Kal mumbled, "to something or other." Then, with more confidence: "Well, let's have the worst, Jor Therol. Tell me what it's all about."

The frown of anxiety cleared from Jor Therol's brow. "Good!" he approved. "We go at once to the rendezvous."

A lift carried them swiftly up through milkily luminescent regions and came to rest at last in a place of complete darkness. Jor Therol led them through devious passages until they emerged into the open.

Ridge Coler stood staring then. They were in an inclosed court on the roof of a tall, circular edifice. In all directions stretched the broad avenues and varicolored structures of the city of Scarta; in all directions literally, for the city was built upon the inner wall of the enormous, hollow globe which was Phobos. Overhead, at a distance of nine miles or more, were other avenues and other buildings; inverted, dangling precariously above them, it seemed.

In the exact center of the sphere was an artificial sun, casting its blue-white light uniformly over the entire city. Below them, and as far as the eyes could follow, the up-curving streets were alive with fast-moving traffic; two-wheeled vehicles speeding in the center lanes, moving

belts at both sides swarming with foot passengers.

In the air above were darting figures, men and women of Scarta—flying. Strapped between their shoulders were torpedo-shaped things, and these glowed a brilliant phosphorescent green. These were levitators, Jor Therol explained; nullifying gravity; controlling its effect in any desired direction and intensity.

"But," objected Coler, "what of gravity in the city itself? How is it that overhead the pull is opposite in direction?"

"It is an artificial gravity." Jor Therol took three levitators from a rack and examined their mechanisms as he spoke. "The energies are in the shell which incloses us. In the center of the sphere the attraction is equal in all directions; therefore our artificial sun needs no support."

"I take it you expect us to use those things?" Kal Turjen asked, looking dubiously at the levitators.

"Yes, indeed. We are safer in the air than on the streets—from Zaraf's spies."

That last remark strengthened Coler's conviction that this was no picnic on which they had come. But he saw Kal's face alight with anticipation and was himself fired with an eagerness to be off and into whatever new experience might be waiting.

Jor Therol showed them how to adjust the straps of the levitators so the mechanisms were securely fastened to their backs. Then he withdrew the control cables and placed a slender tube in the hand of each of the newcomers.

"It is most simple," he assured them. "One merely points the control tube toward his destination and then governs his speed by varying the pressure on the spring—so."

Jor Therol leaped from the roof, soared above them a moment, then swung his control tube around and dropped lightly to his feet.

"Our destination is there," he said then, pointing toward a parklike area some sixty degrees away. "Follow me." With that, Jor Therol's levitator glowed brightly, and he shot out into space with the ease and speed of a Mercurian fire bird.

Kal Turjen grinned. "Here goes," he said, and was off after Jor Therol in a wabbling, lurching rush.

Coler directed his own control tube and depressed the spring; the circular building fell away from him. His experience in ethership piloting served him well and, in a few minutes, he had no difficulty in controlling his flight to a nicety.

The rush through the cool air of Scarta was exhilarating, and he let himself go until he had overtaken and passed his companions. To the right and left, before him and behind, high above—everywhere—was the vastness and magnificence of Scarta. Areas here and there were occupied by rambling flat structures that he took to be factories and warehouses. Other areas were laid out as parks and public places of meeting.

There were wide plazas fronting groups of tall buildings that might have been mansions or palaces or centers of business activity like the skyscrapers of Earth. At other points were sections obviously residential in character. Everywhere there was a riot of color; hues and shades that were made unnatural by the blue-white of the central sun and yet were more dazzling and brilliant than any used in the decoration of buildings in any planet he had visited. Curves predominated in the layout of streets and parks; all of the structures were circular or ellip-

tical in shape and flat-topped for the landing of levitating humans.

A shout caused him to look back over his shoulder. Back there he saw Kal and Jor Therol endeavoring to break through a circle of Scartans which surrounded them. He swung his control tube around and went hurtling toward them.

THERE WERE five in the group that had attacked, and they seemed bent on capturing rather than killing their quarry. Coler directed his control tube upward and soared above them. Then he saw Kal lash out with a flashing right arm, saw one of the Scartans reel off into space and go tumbling toward the city, his levitator out of control. Two of the remaining assailants converged on the Martian, a weapon of some sort appearing in the hand of one. Coler released the spring of his control tube and dropped into the mêlée with the full force of Scarta's gravity accelerating his fall.

He saw the glint of a sweeping blade just as his feet struck home on the spine of the one who wielded it. There was a sharp cry and his victim drifted away, unconscious, the knife spinning off into the distance. This one did not fall, but turned over and over, at last drifting off toward the distant sun with ever-increasing speed. His fingers must have stiffened on the control spring and twisted in his straps in such a manner as to carry him in that direction.

Meanwhile Coler had fallen considerably below the others before he recovered control of his own levitator. Now he shot up into the fray and engaged one of the three remaining adversaries. A huge fellow, this one, and determined.

Coler hurled himself upon him and wound his long legs around his

middle, driving pistonlike punches to his leering face. But again a knife appeared. Swift rage surged up in the Earthman and lent him the strength of a dozen men. He tore the blade from the Scartan's fingers and drove it down toward his breast. But midway of the blow a better thought struck him and he deflected the steel, severing the fellow's control cable instead. Kicking himself free of the shrieking man, he watched as the other started his dive to death.

Jor Therol had disabled his man, and Turjen was drawing back for a blow that would finish the other. Suddenly these last two fell away and darted toward the city. Coler started in pursuit, but Jor Therol called him back.

"Let be, rash Earthling," he said. "A buzzard's nest of them is down there. And we must be on our way."

This time, as they sped onward, the ex-pilot kept close to his companions.

PRESENTLY they reached their destination, and Jor Therol led them once more into milky-lit subsurface passages. They had not proceeded far when the light dimmed and at last was extinguished.

Jor Therol, hurrying before them, produced an electric torch and muttered "Truly, it is the eclipse of Deimos; the time is short."

It came to the Terrestrial that the milky light in which they had walked was the light of the sun, filtering through the semitransparent outer shell of Phobos. Evidently the sphere was like opal glass but lined with a denser and completely opaque material.

They emerged in a room where a huge dome lamp glowed brilliantly over a long table at which five Scar-

tans were seated. As one man the group arose and saluted Kal Turjen.

From this time on, Coler was a mere spectator. And he sat back, greatly enjoying his Martian friend's embarrassment as flowery-worded praise was heaped upon him. It soon became clear that this group of Scartans, including Jor Therol, was known as the Secret Council of Six, and that they had been trusted advisers of Bas Turjen.

Likewise it was evident that here was the headquarters of a party that had been in serious revolt against Zaraf and his government. Puzzled by their metaphorical speech, Kal Turjen was regarding one after the other of them with quizzical gaze. The customary cigarette dangled from his lip, and his black eyes squinted in its upcurling smoke.

"But what is all this to me?" he objected at last. "I take it from what you say that my father was your leader and the instigator of this revolt. But why should I take up the feud? Zaraf doesn't mean a thing in my life; I haven't anything against him."

Der Vandos, who had been designated spokesman of the council, made reply "When you have seen and heard all, oh, son of Turjen, no further doubt will be with you. For know you that Zaraf plots a war of destruction against the planet Mars; he plans again to rule your world. And it was to save his own home and his own people that your respected sire made bold to organize against the tyrant. His last wish was that you take up his work where he left it off."

Kal Turjen frowned. "I can't refuse, of course. But, imps of the canals, this Zaraf must be crazy!"

"He is, without doubt. But he has great power; his scientists have labored for centuries under his di-

rection and have perfected a force most terrible in its effect on humans. Other forces have been developed which make it possible to carry on invasions though leaving him and his followers beyond reach of reprisal."

"No man has yet devised a weapon against which a defense could not be erected." Kal was still scornful of Zaraf's power. "I'll lay a bet that his——"

Der Vandos interrupted him "So thought we all—at first. But you shall see; already the work has begun. Behold, oh, son of Turjen."

The lights of the council room dimmed, and a rectangle opened in the floor, disclosing another of the three-dimensional television surfaces like those Jor Therol had used in the drylands. This one was of much greater size, its rosy mists rising from an area of the metallic liquid about eight feet in width by ten in length. A telepool, they called it.

Objects were taking form in the vapors.

#### IV.

SPRINGING up, as if in actual miniature reproduction, was one of the canal cities of Mars. There was a section of dryland territory on the one side of moonlit Canal Pyramus, the spires and minarets and glistening nickel-cobalt roadways of the city on the other. Lights of many *ronsals*, the vehicles whose elongated bodies were supported a few feet above the roads by the energies with which they were charged, could be discerned plainly. The traffic was that of mid-evening, proceeding at a leisurely pace.

"It's Copais!" breathed Coler.

"Right!" said Kal. "And only sixty miles from Risapar."

Der Vandos said solemnly "The

point chosen by Zaraf for his first attack. Observe you—over near the dryland village."

A collection of rude huts near the edge of the desert was lighted suddenly as if by a great searchlight. The natives swarmed out of their dwellings like flies, and immediate confusion reigned in the streets. The source of illumination was close by—a battery of huge floodlights on the mistily visible wall of a fortress which had sprung up in the midst of the drylands as if by magic.

No mirage was this, but a seemingly substantial and formidable armed city, a mile square and alive with Scartan warriors. Over in the dryland village, torpedo-projectors appeared in the hands of some of the bolder natives. A scattering volley was fired upon the fortress, and vivid bursts of flame showed where their charges of ultranite had exploded. The marksmanship of the drylanders was excellent.

But no single building in the walled city was harmed. Nor did a Scartan warrior appear to be injured, though some of the tremendously powerful torpedoes had burst in the crowd.

"Jupiter!" gasped Coler. "They're apparitions. Look! You can see clear through them."

It was true. The walls and buildings of the fortress, although seen with the utmost clarity, were transparent. This was likewise so of the warriors who now massed about the numerous unfamiliar engines of destruction within the area. The drylanders, stricken with wild panic, were deserting their village in a disorderly flight toward Copais.

Der Vandos explained "The city and the warriors are not there, but are here in Phobos. All has been projected to the spot where it seems to be by energies in the control of

Zaraf's scientists. Not as real substance or as flesh-and-blood men, you understand, but in a quasimaterial form capable of functioning as matter or as living humans and yet indestructible."

Those of the drylanders who had fired torpedoes now dropped their projectors and joined the rout of their fellows. But a withering blast of flame leaped out from the fortress in pursuit, licking up the poor hovels of the village in its course, overtaking the stream of fleeing villagers, and leaving only charred and moveless masses when it subsided. The flame at least was reality.

Kal Turjen growled deep in his chest. "Filthy swine!" he rasped. "They're harmless, these villagers, not like the bandit tribes of the forbidden provinces."

"Aye," said Der Vandos. "But that gives no more concern to Zaraf than do the peaceful habits of your canal-city dwellers. He is mad with the lust of conquest."

A spiral of luminous vapor now rose from the phantom fortress and drifted toward the city of Copais. In a moment another spiral arose, then a third. They were like red-lighted columns of smoke, twisting into endless helices as they spouted from the nozzles of machines of the spectral warriors; moving swiftly across the canal to hover above Copais and there gathering into blood-colored clouds which hung in the thin Martian air like the storm clouds of Earth, eerie and menacing.

"Behold," gulped Der Vandos, "another of Zaraf's atrocities!"

The focus of the television apparatus changed, bringing a nearer view of the city, and suddenly a terrific bolt of lightning streaked down from one of the crimson clouds and struck the spire of the great municipal assembly building.

Der Vandos muttered "It is well that you hear as well as see."

There was the click of a control mechanism, and thunderous echoes rolled up from the Liliputian city that was so real before their eyes.

WHERE THE man-made lightning had struck came instant disruption. The tall spire was split asunder, seeming to hesitate for a moment in mid-air, a mass of broken masonry, before crashing to the roof and into the streets. A section of the nickel-cobalt roadway was swept down from its supporting pillars and onto the crowds of humanity beneath, a dozen or more of *ronsals* carried with it, spilling out their passengers as they fell. Frenzied screams of the injured and moans of the dying came to the ears of the watchers. A tongue of flame licked up through the shattered roof of the building; in another minute a roaring furnace was below.

Lightning struck again and again from the red clouds until the central portion of the city was a mass of wreckage. The conflagration spread rapidly and frantic efforts of the fire-fighting squads to push through the fear-maddened crowds and debris-blocked areas were of no avail. Then came the ghostly warriors of Zaraf.

In close formation they advanced through the streets, through the frenzied mobs, and through flame-swept areas as if none of these things existed. On each warrior's head was strapped a gleaming half sphere from which radiated an unnatural wavering glow. The people of Copais, gazing on these strange headpieces, were stricken down in their tracks.

"They are lost," asserted Der Vandos. "It is the energy of mental enslavement."

Looking at Kal across the televue mechanism, Coler saw his bronze profile a grim and determined outline in the flickering red light that came up from the representation of Copais. The muscles of his jaw were taut ridges under the skin; the knuckles of his big hands showed white from his grip on the edge of the rectangular inclosure. Never had the Earthman seen his friend so shaken out of his usual stoicism.

A great shouting drew Coler's eyes once more to the burning city. Zaraf's warriors, a solid phalanx of spectral marchers, had reached the central square from which the milling crowds had miraculously cleared. Charging down one of the main avenues was a detachment of the red police, coming to attack the invaders.

The Scartans wheeled about to face the onset, standing at attention as if for a review. No weapons were in their hands; they appeared to be entirely unarmed save for the glowing headpieces. But they awaited the attackers with utter indifference. They seemed real enough now and somehow vastly more formidable an army. Only the closest scrutiny revealed that their bodies were semitransparent.

Torpedo-projectors came up from the saddle holsters of the red police, and a volley was fired into the square. Almost simultaneously, a hundred ultranite charges exploded among the invaders. Deafening crashes reverberated from the surrounding buildings, great masses of debris spouted high from the square, and the jikiris of the police were driven back on their haunches by the violence of the concussions.

It seemed that the invading host must have been annihilated by that terrific bombardment, but when the air had cleared their ranks were seen

to be unbroken. With the very soil and pavement blasted away from beneath their feet, the phantom army stood calmly awaiting the commands of its officers. The red police, belaboring their reluctant mounts, charged into their midst with maces swinging.

No mace, however, reached a Scartan head with effect. Though wielded vigorously and accurately, these riot clubs of the red police were as useless as had been their torpedoes; they passed on through their marks as through clouds of vapor. As if at a signal, the demoralized jikiris bolted, leaving many of their riders behind to battle frenziedly these foes they could see and hear but could not touch.

And now the wavering glow of the Scartan headgear increased its intensity until the entire area of the square was shot through with illusive, stabbing light-pencils. When the radiance subsided not one of the red police was on his feet; all were down, some crawling on their bellies, others on their hands and knees. And they had become twisted monsters, gibbering and screeching in utter madness. Groups of citizens who had tarried at the corners of side streets to watch the conflict ran screaming into the shadows.

Kal Turjen swore vividly and picturesquely. "What does it do to them, this energy?" he demanded. "Will they die?"

"Worse than death is the result," replied Der Vandos. "Behold!"

THE CITY ROSE up swiftly in the viewing area until it seemed the onlookers were but a few feet above the street. Refocusing, Der Vandos centered on a street intersection where throngs of fugitives were passing. Faces distorted with fear



and horror were raised up out of the multitude; voices shrieked imploringly to the gods of the ancients. At frequent intervals, billows of heavy smoke drifted over the scene; the crackling roar of the conflagration was heard with increasing distinctness.

Then came the tramp of marching men. The fugitives moved faster, their numbers thinning out until only a few stragglers remained. One of these, a young and beautiful woman with an infant hugged to her breast, fell sobbing to the pavement. The van of Zaraf's army was upon her. She cowered against a building wall, unable to cry out or to go on.

On came the marching warriors, swinging into view, a well-drilled and proudly erect force, hard on the heels of the fleeing populace. An officer, walking beside his contingent, fell behind when he saw the woman. But only for a moment, and then only to regard her contemptuously. His headpiece glowed spitefully, and the wail of the infant rose high. The officer again fell into a step without so much as a backward glance.

The woman stiffened and shuddered, pushing the little bundle from her with fingers that were suddenly twisted claws. She turned her face to the heavens, and it was a thing horrible to behold, the face of an aged crone, withered and drawn out of all semblance to the beauty it had held. In the staring eyes was complete vacuity of expression. She rose up then, bent and tottering, and slunk into an alleyway.

"Imps of the canals!" raged Kal. "Can nothing be done to stop this?"

Der Vandos readjusted his apparatus, and the view dropped away into the distance, dropped away until the entire city of Copais and

the canal and the phantom fortress were once more included as it had been in the beginning.

"Have patience, oh, son of Turjen," he counseled. "All possible has been and is being done. But know you that much yet remains to be accomplished, and that is why you are here."

The fire had spread until Copais was now a roaring inferno. All of the inhabitants who had survived were now in the desert. Behind them came Zaraf's warriors, their headpieces glowing, sending out radiations which made of the fugitives a helpless, plodding multitude of stiff-jointed automatons. Helpless and hopeless, utterly at the mercy of their conquerors' wills, tramping their way over the white sands to the phantom fortress.

"Turn the thing off!" barked Kal. "Turn it off, I say. I've seen enough."

The lights of the council chamber switched on, and the view in the rectangle faded into nothingness.

Der Vandos, trembling, spread wide his hands before Kal Turjen. "It is the first of the canal cities," he quavered. "Heretofore there have been only the experiments in the drylands. But now——"

"Now we'll do some tall thinking and some fast working," announced Kal, dropping into the chair at the head of the council table.

A great light of understanding had burst upon Coler at the words of Der Vandos. He knew now that *this* was the lost city of dryland legend, this phantom fortress. During two or three hundred years of research work, Zaraf had probably set it down a dozen times in the forbidden provinces, each time in a different location and with different results. No wonder there were weird tales from those regions; no

wonder the lost city had remained a mystery to those who had searched for it; no wonder there were the beliefs in black magic.

And now, with his ghastly weapons perfected, Zaraf was setting out to spread his tyranny throughout the red planet.

## V.

KAL TURGEN took control of the council as if to the manner born. "Now give me the whole story," he bade Der Vandos. "And tell me what plans have been made. I take it this maniac Zaraf intends to strike at Risapar next. If so, he must be stopped."

The Scartan placed a silver-clasped book on the table before Kal. "The diary kept by your honored sire," he said. "It is yours, and will confirm what I have to say when you find leisure to peruse it. But there is no time for that now; you have guessed correctly as to Zaraf's intentions and, as you have said, Risapar must not share the fate of Copais. As to our plans, they are those laid by Bas Turjen; he labored thirty years to perfect them. Unfortunately, he has not lived to witness their fruition.

"For many years the small group he organized has spied on the activities of Zaraf's scientists; we have kept ourselves hidden in the workings beneath the streets of Scarta, but have followed the progress of the experiments with the energies you have seen in operation, and have constructed screens in the shell of Phobos which will nullify these energies."

"Then why in the name of the Mercurian heat devils didn't you use the screens?" Kal demanded. "The lives and brains of thousands might have been saved—Copais itself."

"Not so," asserted Der Vandos. "Work on the screens had only now been completed, and it was necessary that the initial attack proceed as Zaraf intended in order that the neutralizing forces of the screens might be tuned to the proper period of oscillation. By now that must have been accomplished; we should at any moment receive the report of our own scientists. But here is the plan in detail."

A cross-section drawing of Probos was spread on the table, and Kal's dark head bent over it. Coler, who had kept himself in the background, moved closer.

"This," said Der Vandos, placing his finger on a pictured group of buildings on the inner wall of the sphere, "is the fortress. The four towers you see adjacent to the four corners of its wall are the radiators of the various forces used in the projection to the mother planet. Our screens are directly underneath—here—buried in the shell of Phobos. And our own force generators are close by, likewise hidden in a chamber beneath Scarta's streets."

He pointed to another spot some distance around the circle. "At this point you arrived with Jor Therol. It is the receiving station of the secret car we acquired from the Moderns who brought Bas Turjen to us in the beginning."

"The Moderns?" Kal repeated.

"Aye; that is what we term them. You should know something of the principal factions of the Scartan citizenry. The ancients are about equally divided into two parties, the Zarafists and the Conservatives, the former supporting the emperor in his scheme and desirous of returning to Mars as its ruling class, the latter content to remain in Scarta to the end of time. Together, the two main factions number about four

millions. Then there are the Moderns, a hundred thousand or more, who were born within the confines of Phobos, these being considered by the ancients as a wild and irresponsible lot. A goodly number of these last have joined our movement."

"Our group then is a separate faction?" asked Kal.

"Indeed it is; we are humanitarians—reactionaries or atavists perhaps—and our number is small, not over three hundred in all. But we are sworn to the cause and the secrecy, and none yet has betrayed his trust. We shall keep Zaraf from his objective or perish in the attempt." The last words were bold enough, but the voice quavered.

Kal Turjen puffed so vigorously at his cigarette that it became a miniature torch. "Seems like everything depends on these screens," he mused, squinting through the smoke cloud which almost hid his face. "What if they don't work?"

"They will, they *must* be successful." Again there was a shadow of doubt in Der Vandos' tones.

At this point a messenger entered the room, breathless with the word he brought. With Kal's nodded permission he blurted out: "They've found our space car—destroyed it, together with its auxiliaries."

The Martian swept the council with a quizzical gaze. "Meaning what?" he demanded.

Jor Therol made reply: "We have for long been under suspicion, and this news means that Zaraf's spies have made an important discovery concerning us. Further investigation will be swift and far-reaching, as it has been decreed a crime punishable by death to manufacture or possess any form of vehicle for traversing the vacuum of space."

"And it means we haven't any way

now of getting out of here," muttered Coler. "Even if we wanted to."

KAL TURJEN looked through and beyond those about him, into a far place. The Earthman knew where. In Risapar was his own home, his own people; a woman he might never hope to call his own, but whose safety and happiness were dearer to him than life itself.

"We'll carry on," the Martian decided. "Let me have a look at the screens."

A murmur of approbation fluttered over the council which seemed in this place so futile and indecisive. Now that they saw a new leader risen up in their midst, dour faces and dull eyes brightened.

And Kal Turjen, although dwarfed in stature by the Scartans who now led the way from the council chamber, was somehow a commanding figure among them. Coler trailed along.

A new thought struck him. These were of the ancients, these councilors, and had lived thousand of times the span of life of the ordinary mortal. They were tired of living, tired of the endless years, yet fearing to die by the violence that was their only release. Though endowed with superhuman perfection of physique and with virtual immortality, existence to them had long been aimless, a mere repetition through the dragging ages of what they had seen and heard and done many centuries before.

Bas Turjen, when he came, or was brought to them by one of the adventuring Moderns, was a novelty at first. Then he had stirred in them emotions long dormant, had roused in them a feeling of kin to the canal-cities race from which he was sprung. With his passing they had

let down; now with the coming of the son they were buoyed up. It was easy to see why the elder Turjen had not permitted them to subject him to the energies of perpetual youth.

Kal sang out: "Come up here, Ridge."

He saw the Martian, with Jor Therol and Der Vandos, climbing into some sort of vehicle that stood at a passage mouth. Coler needed no second invitation to join them.

Then, with only the four of them huddled into a cramped cylinder with transparent walls, they were hurtling through a tunnel that was bored through the milky-lit shell substance of Phobos.

"You stick by me," Kal whispered huskily. "Each for the other, same as always. I'll lay a bet we'll be on our own and with mighty few friends before this is over."

Coler grinned; as usual their opinions agreed. "We still have our torpedo-projectors," he returned, speaking in Sol-ido, the tongue in universal use by interplanetary travelers. As an afterthought he added: "These levitators, too."

"Neither of which would be of much avail against Zaraf," gravely put in Jor Therol.

The Earthman stared; evidently the sound-telepools of Scarta had searched the worlds and ships of space for many years, learning their secrets; or Jor Therol had visited far from his native city. He spoke Sol-ido with easy fluency.

"You have many things to learn about us," chuckled Der Vandos. "But that is of no moment; a doubt was expressed which you need not entertain. We are loyal to the cause of Bas Turjen and so will remain. Be assured that you are with the staunchest of friends."

Coler's glance met Kal's; certainly

the Martian had not spoken above a whisper. Both men had forgotten the thought reading and transference previously exhibited by Jor Therol.

The car, however, was coming to a shrilling, protesting halt. Further conversation was out of the question.

And they were to learn later that Der Vandos had not dissembled.

EMERGING in a vast cavern, they looked out over an enormous spider's web of silvery wires that hung in graceful catenaries radiating from numberless insulating cones. As far as the eye could reach, the great web spread out, a horizontal expanse of interlaced conductors more than a mile square. It lay between the inner and outer surfaces of Phobos, and under the city of Scarta, directly beneath the fortress.

Numbers of Scartans could be seen at work in the maze of conical towers supporting the wires. Overhead a catwalk led sloping across the web to an inverted crystal dome which depended from the highest point in the cavern roof. Der Vandos and Jor Therol led the way up the catwalk. The other members of the council had not yet arrived.

The crystal dome proved to be the heart of the protective screen system. In it was housed an intricate array of control mechanisms with cables that looped down to the metallic web beneath. Above were passages leading to humming power plants in smaller caverns, some of these passages nearly filled with great copper buss bars for transmitting the generated energies, others carrying moving belts for the transportation of men and material.

Der Vandos was explaining the functions of the various elements of

the system. Coler observed his Martian friend's growing impatience.

At last Kal Turjen interrupted: "But why did you send for us? It is completed, the defense perfected. As a leader I'll be no more than a figurehead."

"Have you thought of what Zaraf will do when he finds his next attack unsuccessful?" the Scartan countered. Again there was that hint of vacillation in his manner.

There was something the Scartans feared other than that which had been revealed.

Kal's eyes narrowed. "I see," he grunted. "And I guess you're right; the emperor will be hot on our trail at that. Well, what did Bas Turjen plan as a follow-up to this business of the screens?"

"He planned——" The bronze of Der Vandos' cheeks paled as if he feared to reveal a portentous secret. "But that can wait. We go at once to the meeting of our followers which is to take place in the assembly hall. There you shall learn all."

"How about the attack on Risapar?" asked the Martian.

"That is not scheduled for more than four hours."

An attendant at one of the control panels plucked at the bare arm of Der Vandos, drawing his attention to a small telepool on a near-by pedestal. The viewing surface of this apparatus was hooded to shut out the light of the crystal dome room, so the others did not get the view. But they knew something was amiss when they heard the Scartan's cry of horror. When he wheeled to face them his eyes were dilated, his face was drawn and his lips trembled.

"Shades of the ancients!" he gasped. "They've blown up the tube

from the council chamber and slain more than thirty of our friends."

Coler peered into the hood of the televue and saw nothing pictured there excepting a single man, a nude and bleeding Scartan who was shouting soundlessly and gesticulating wildly.

"Look here," he said. "What's this about?"

Jor Therol moved a lever which brought the shouts of the imaged being to their ears. All crowded near the pedestal.

An incredibly tiny voice, yet fraught with terror and panic, was heard. "They alter their plans," it warned. "Take heed; operative number eleven reporting definitely that the next attack is to be made immediately instead of as scheduled——"

Coler happened to be the one looking into the hood when the thing occurred which shut off the voice. He saw a pencil of searing white flame stab across the view, saw the miniature nude human shrivel under its awful blast until only a cindery heap was left.

## VI.

KAL TURJEN had frozen to immobility; the two councilors were for the moment speechless. Attendants at the controls, too far from the small telepool to have heard, went on with their duties as before. In the vast space below the crystal of the dome room, other attendants moved in and out among the insulating towers of the screens; antlike, methodic beings; unemotional.

Then Kal's voice boomed out: "Well, what's the delay? Isn't everything ready? Can't the screens be operated?"

Jor Therol was galvanized into activity; Der Vandos seemed like a

man in a trance. A siren's wail broke startlingly into the normal low hum of the place as Jor Therol shouted orders to the control operators. Down there beneath the web of gleaming wires men scurried for cover.

Der Vandos came to life and sprang to a raised platform at the end of the control board, calling for Kal to follow him. Coler was at their heels.

Set flush with the platform was another telepool, this one of good size. The Scartan placed it in operation, and in the rosy mists which immediately rose from the surface there formed an image of the fortress and its four towers. Very real and substantial now, the fortress; its turrets and machines alive with warriors.

"Number eleven reported correctly," said Der Vandos.

Coler saw that trunnion-mounted cylinders like huge searchlights were being swung into position atop the towers; energy projectors, their sighting tubes being trained on the distant city of Risapar.

The siren shrieked once more, and instantly the crystal dome was filled with a throbbing roar which filtered in from the power plants. The wires of the screens beneath them glowed brilliantly green.

Jor Therol mounted the platform. "We are ready for them," he said simply.

Men were filing up the catwalks from below, not toward the room of the controls, but to an entrance that led into the solid wall of the cavern at a point some fifty feet away. Coler took note of the uniform magnificent physical proportions of them, of their firm steps and proud carriage. But in the demeanor of the Scartans was something he could not fathom, not fear exactly

but a certain hesitancy like that displayed on several occasions by Der Vandos and the other members of the council. Somehow they reminded him of sheep without a leader.

That was it. They were that exactly; Bas Turjen had gone from them and Kal had not as yet taken the reins. And still there was a mysterious something. Why these giants of men should go to the extreme of sending to Mars for two who were their inferiors physically and intellectually, why the loss of their Martian leader should be of such prime importance, was a puzzle.

Kal questioned Der Vandos.

"They are your followers," he replied. "They go to the assembly chamber where you will address them."

Coler saw a perplexed frown gathering between his friend's eyes and knew that he was asking himself the very questions which had come to his own mind. But Kal said nothing further.

In the telepool was a scene of confusion. Through a gate in the fortress wall hundreds of stumbling humans were pouring, thousands of them. Walking stiff-legged and blindly, groping as if in darkness. Der Vandos brought the view nearer. They were the people of Copais, these unfortunates, being driven into slavery. Mentally enslaved by Zaraf's weird energies, mechanized. They were little better than robots now. Coler gritted his teeth futilely.

Again the view changed, this time to show at close range the top of one of the fortress towers. Here men could be seen working with one of the huge searchlightlike apparatuses, adjusting its intricate controls with infinite exactitude. At



last it seemed that their work was finished; they stood at ease as if awaiting a signal.

"And now the test," breathed Jor Therol.

Sound came up from the gleaming vapor of the telepool, a shouted order to the crew of the energy projector "All clear; the prisoners are away, the gates closed. Release the force."

Tensely the four at the telepool waited.

Then came a blinding glare from the imaged projector, a burst of ear-splitting sound within the crystal dome. The near-by generators groaned under a suddenly enormous load. Mighty energies were in conflict.

Looking down from the control room, Coler saw the huge metallic web alight with flashing colors. It seemed to be a thing alive, each individual wire of its structure writhing and leaping like a python of the marshes of Venus.

A single strand sagged, glowed with the brilliance of a magnesium flare, and vanished in a puff of green smoke. But only one.

"IT HOLDS!" exulted Der Vandos. "It holds." He refocused the telepool, and the entire fortress came into view. Zaraf's fighters were running in all directions from the engines of destruction, each of which formed a brilliant pyrotechnic display under the conflicting forces to which it was subjected. Showers of sparks arose from all these masses of metal; lighter metallic parts fused and spread in incandescent blobs. The warriors were tearing at their headpieces, casting them from them as they heated to redness, yelling with the pain of their burns.

Officers' commands went unheeded.

The fighting forces of Zaraf were completely demoralized.

For a long moment panic reigned supreme. Then some one thought to shut off the power from the energy projector towers. Their glare subsided.

In the crystal dome room the attendants calmly manipulated their switches and levers. The great generators resumed their normal low-voiced hum. The flashing colors of the screens were extinguished. But no word of triumph was spoken by Jor Therol or Der Vandos. They remained peering into the vapor of the telepool. Coler saw that some awesome anticipation was in their gaze.

And then a circle of inky darkness swept down into the fortress, wandering across the open spaces, searching out every corner and nook of the inclosure; uncanny; ghastly, somehow.

Jor Therol croaked: "The black death!"

No sound came now from the telepool, but where the dark circle had traveled there remained no man on foot. All had been stricken down to grovel on all fours. Coler thought he saw one of the warriors swell to hugely bloated proportions in a moment of time. Der Vandos flipped the switch which broke the circuit, and the apparatus went blank.

"It is not good to see the results of the black death," he choked. Cold sweat stood out on his forehead in great beads; his eyes were filmed with that *something* which was the threat of the place.

Kal Turjen cleared his throat. Words, hot words, were pent up within him and he meant to let them loose.

"Come," said Der Vandos, recovering his equanimity. "We go to the assembly chamber."

The Martian subsided. What he had to say would be said before them all. Coler chuckled, knowing well what was in his friend's mind and looking forward zestfully to the result.

KAL, HOWEVER, was strangely mute when they led him before the assemblage. It was gathered in a low-ceilinged chamber not unlike the auditorium of a theater, and they placed him on the rostrum before a sea of upturned faces. Der Vandos raised his voice, telling his followers that this was the son of Turjen for whom they had been waiting.

Coler, off to one side with Jor Therol, sensed a queer atmosphere in the place. Kal, he saw, was standing in a beam of light that struck down from above, illuminating his head and shoulders with an eerie glow. Something was wrong with that light; something was unnatural in the stares of the audience. Something was there in this room which set Coler's scalp a-tingle as if every hair of his red thatch was standing on end. Kal seemed to shrivel and wilt and lose his masterful air as he stood there.

He began to speak, and the words he used were not his own. Even his voice had altered. He talked like a priest, bidding his hearers to renew their faith in the cause and to cast out all fear of the black death. Something seemed to be flowing into him along that beam of light from above and from him to the minds of the listeners. Uncanny fluttering pulsations were in the air of the place.

Coler blinked as Kal's erect form sagged, and his crisp, black hair became gray, then white, then for the most part vanished. Lines that showed suddenly in his smooth bronze countenance deepened very

rapidly into great furrows. His hands, shaking as with palsy, shrank to talons with huge bony knuckles over which the skin was drawn like parchment.

Enlightenment came to the Earthman and a fierce rage. This was no longer Kal Turjen, the son, but Bas Turjen, the father. Through some ghastly force the Scartans had developed, the metamorphosis was taking place. Kal's stalwart form now lay in the place of his sire's body in whatever of the far reaches of space it might have reached, and Bas Turjen was here—alive. The rising murmur from his followers gave ample evidence of that.

No wonder the father had willed this! No wonder he had sent for Kal! The secret of Bas Turjen's success in this place had been his mental ability to control the fears of the Scartans. This fear of the black death was something that rendered them helpless against Zaraf; it was a thing they could no more help than they could the color of their skin or eyes. But Bas Turjen, mentally driving it from them, had made of them valuable allies, and now he had returned to keep them in the work for which he had planned.

And Kal was gone from this life, a sacrifice to his own people and to the mad schemes of a father who had deserted his family, a victim to the deceptions of Jor Therol and the other councilors. Coler gripped Therol's arm and faced him accusingly.

The Scartan dropped his gaze. "It was the only way," he asserted. "And you need not fear——"

Coler saw red. "Fear!" he stormed. "Jupiter! I haven't any fear; it's you and your kind who're cowards. Fear of the black death that Bas Turjen showed you how to overcome. Even Zaraf is a cow-

ard; he sits hidden somewhere directing the movements of his warriors who are themselves afraid to land on Mars. Project their images instead. Bah! You make me sick, every man Jack of you."

Jor Therol spread his hands and smiled deprecatingly. "But hear me, white man of the third planet. It——"

Coler did not hear him to the end. He pushed to the rostrum and took up a position near Der Vandos. No plan was in his mind; in fact he could not have explained his own action in thus trying to be near the withered old man who had been Kal Turjen but was now a greatly aged caricature of the young Martian. Kal's murderer.

The old man was spitting out words sharply, decisively. "Now," he shrilled, "we carry on with the rest of the program. We go to Zaraf before he comes to us——"

Awed, ghastly silence. Faces staring from below with sagging jaws and eyes dilated. Fear—awful devastating fear of the black death—was in those masks.

The light beam from above doubled in intensity, forming a halo of brilliance about the bowed head of the speaker. Then the spirit of the old man—and Coler was forced to admire him for it—communicated itself to his audience. The Scartans rose *en masse*, cheering.

Understanding warmth was in the smile of the patriarch as he waved his arm to silence them. "Yes," he continued. "We go now—at once. You will proceed to the arsenal for levitators and weapons."

Coler stood undecided. The equipment of Kal Turjen was strapped to the emaciated body of the old man, torpedo-projector, levitator, and all. Kal's clothing hung loosely on his frame; certainly this

was Bas Turjen who stood in his son's shoes. It was a horrible thing he had accomplished—he, a corpse, to return to the land of the living and to encompass the death of his own flesh and blood for the sake of an ideal.

And yet the Earthman was moved to vow him support. He walked to his side as the Scartans streamed from the hall.

Then a terrific explosion rocked the place. Hot gases poured in through the passages which led from the cavern of the screens. Zaraf had struck before them.

## VII.

NO FEAR or confusion was in evidence now among the rebel Scartans. The passages from the cavern of the screens and of the crystal dome room were sealed hermetically by huge sliding doors of thick metal, and they filed through the tunnel to the arsenal in orderly fashion.

On the rostrum were left only the elder Turjen, Der Vandos, Jor Therol, and Coler. The old man turned to the Earthman, eying him quizzically.

"So you are Kal's friend," he mused. "Can you find it in yourself to follow me in this thing I have set out to do?"

Coler returned his gaze, seeing much that reminded him of Kal in the level look of his jet-black eyes. That was the sole reminder, however, for the old man's features bore no resemblance to those of the younger man. The Earthman's heart sank; somehow he had cherished a hope that the transformation had been imaginary. But he responded to the indomitable spirit and will of the other, willy-nilly.

"I'm with you," he said evenly.

They were in the arsenal then,

where the rebels were arming methodically. Each Scartan was provided with one of the levitators and with a pistollike contrivance much like one of the smaller torpedo-projectors such as were used by the red police of Mars.

Coler questioned Jor Therol.

"Flame throwers," Jor Therol told him. "You saw in the telepool how operative eleven was disposed of."

"But to go out against Zaraf's hordes with those—a mere handful of us. Is it practicable?"

Jor Therol shrugged. "It is the plan of Turjen."

A dozen escape tubes led from the arsenal and these, at a word from their leader, were filled with levitating humans. Coler kept close to Bas Turjen, who went up flanked by Jor Thorol and Der Vandos. They came up into the great interior of Phobos; Scarta was all around them. And, far overhead, was the blue-white sun. Beneath them was the fortress with its four towers untenanted, its demolished machines unmanned.

Down there in the inclosure, however, were hundreds of cindery black creatures running about; creatures who once had been men, deformed beyond recognition, with fiery pools of eyes set in lusterless black faces; fighting among themselves, screaming gibberish. Later they would expire—horribly. It was the black death.

An attacking party rose up from near by, but not more than eight or ten were in the group. They went down, flaming torches, under the vivid spurts from the massed rebel forces.

Coler found he was rising with greater speed than the others, due to his lesser weight. He retarded the force of his levitator and fell back alongside of Der Vandos.

"Where does Zaraf keep himself?" he inquired.

Der Vandos pointed to the blue-white sun.

"Jupiter!" gasped the Earthman. "There! Inside?"

The Scartan nodded solemnly. "We burn our way through."

For sheer audacity this plan of Turjen's was unequaled. Yet by its very audacity and seeming impossibility it might succeed. Coler was consumed with admiration for the old man who was speeding along there almost within reach of his hand; serenely confident, and with the courageous thoughts of him flowing out to bolster up his Scartan followers.

Another attacking party came upon them and went the way of the first. Flaming masses dropping like plummets into the city. By now Zaraf would know that the rebels were loose in the interior of Phobos.

Chancing to look up at the blue-white sun, Coler thought he saw a portion of its surface blotted out by a dark circle. He squinted and peered through his lashes. Yes; there was an inky spot—moving ever so slowly from side to side as if searching—

A scream came up from the group of Scartans below him, and in that moment Coler saw the shaft of darkness which swept down from Zaraf's stronghold. It was like the jet of a huge fire hose spurting a great stream of ebon liquid. The stench of putrefaction arose.

Instinctively he reached out to the elder Turjen and, turning full force into his levitator repellers, shot with him swiftly out of range. Der Vandos was after them, his face contorted with pain and his left arm already shriveling and blackening. Zaraf had loosed the black death upon them.

HIDEOUS blackened forms, some bloated suddenly, others shrinking unbelievably, went hurtling by as the mighty will of Turjen spurred on his stricken followers. On toward the shining sun, on to finish what they had started! But the black spot up there was wandering anew, searching them out. Another blast of darkness and another. Coler heard Der Vandos gasp. Turjen went limp in his hands as the overpowering stench of the black death swished by.

A sharp pain—his own hand wrinkled and hideous, Coler saw. Bas Turjen choking, purpling, the purple deepening into the hue of night. The Earthman, mouthing curses, twisted his good hand in Turjen's belt and shot swiftly on toward Zaraf's hiding place, towing this man who had been stricken by the black death and who was his only connecting link with Kal.

Der Vandos followed, coughing horribly, his eyes red—luminescent in the charcoal of his shrunken visage. All the others were gone.

The curving bulk of the sun was immediately above them now, its cold light dazzling in their eyes. Turjen seemed to have lost consciousness, but Coler clung to him desperately. Der Vandos, his breath coming in whistling gusts, aimed a blast of flame at the glowing shell. A shower of sparks spouted from the point of contact.

Coler let loose a torpedo, and the thing was done. Where it struck, a great jagged opening was blasted into the sun of Scarta.

They rose through swiftly and were in the darkness of the interior. Turjen slumped down and lay still when Coler cut off the force of his levitator. But he still breathed; he lived; his old body horribly distorted and tortured by the black

death. Coler turned the light of his pocket torch on the walls of the place; turned it quickly away when it fell on the livid mask of Der Vandos' face.

Implacable hatred was in the Scartan's voice when he said: "I once was a member of Zaraf's court, Earthman; I know the way to him. We will yet have revenge."

No fear was left in Der Vandos, only unutterable bitterness against the monster who was responsible for his condition. A dead man already, and suffering untold agonies, he yet was nerved to the task of bringing retribution to the tyrant.

Looking at Turjen, Coler was moved to the same fierce resentment. "Lead the way, Der Vandos," he grated.

They placed the crippled Turjen comfortably in a corner of this dark compartment of Zaraf's stronghold and set out together through unlighted passages, Der Vandos clinging to the Earthman's jacket, hobbling painfully, groaning with each step. The hum of machinery deep in the vitals of the sphere came to Coler's ears.

A light at last showed from behind a heavy arras that hung across a passage end. "It is here we shall find the beast," whispered Der Vandos, the words rattling in his throat.

Zaraf, a gross, pot-bellied figure of a man with expressionless, pendulous-jowled face from which pig eyes peered out, was lolling on the cushions of an ornate throne. Flanking him were six armed guards. Before him, reclining on a luxuriously caparisoned ottoman, was a woman of exotic beauty. A brittle laugh came from her as she peered into the viewing vapors of a telepool.

Der Vandos could restrain himself no longer. A roaring pencil of

whiteness leaped from his flame thrower. But it missed its mark; his blackened hand, shrunk to a claw, was too unsteady. The flame only spattered on the metalwork of Zaraf's throne, melting down one side to a shapeless lump.

The emperor paled and huddled deeper into his cushions, whimpering orders to his guards. The woman pulled herself to one elbow with the slinking swiftness of a leopard. A flame thrower appeared in her jeweled fingers as if by magic; it belched lurid fire.

Der Vandos fell without a sound. The odor of burning flesh was strong in Coler's nostrils, firing his rage anew. He let fly a torpedo and ducked as its terrific detonation rocked the place and sent fragments flying.

The opposite side of the throne room was demolished. No living being remained. Zaraf and his fire-brand consort, the guards—all were mangled corpses. At Coler's feet Der Vandos was a smoldering heap. He turned blindly and rushed from the room.

Lost in a maze of passages, he came eventually to a compartment that had a familiar look about it. Casting the light of his torch over the rusted and long-unused mechanisms it housed, he drew in a sudden sharp breath. This was like the control room of an ethership; navigating instruments, telescope, space stick, gravity controls—all were here.

An idea struck him, a great idea. He hurried in search of Bas Turjen.

THE OLD MAN lay where he had left him. The black death was overtaking him rapidly, but he was now conscious.

"You—you found Zaraf?" his twisted lips asked.

Coler gulped; he could not look at the horrible thing they had made of the Martian. "Yes, found him," he answered. "He is no more."

"Der Vandos and the rest of my followers?"

"Killed, all killed."

A choking sound racked Turjen's tortured frame. It might have been a warning of the death that was almost upon him.

Coler gathered him up in his arms and ran, telling him of the idea which had come to him.

"It is good, very good," the Martian approved. "And the controls of other energies are in that room. First you must loose the force which will cast every living thing in Scarta into the coma which lasts for eighty moons."

The Earthman's spirits rose. Kal was gone; Copais was no more. But at least the score had been evened with Zaraf. And now it lay within his power to remove forever the menace to the red planet.

He deposited the aged Martian's form in a padded seat he found in the room of the controls. Wild shouting rang from somewhere along the passages; Zaraf's minions were hunting for him.

"The sleep force," Turjen urged. "There, the control is there. No time is to be lost."

"We are insulated against it here?" Coler asked.

At Turjen's affirmative, he pulled the lever. A gentle vibration of the floor plates answered. Presently the shoutings in the passages ceased. He turned his attention to the space stick and navigating instruments. Phobos was his ethership; by use of the self-same forces which had raised it from the drylands of Mars in the beginning, he would fling it from its orbit and far into outer space where no survivors of the brood of Zaraf



could again renew the warfare of the phantom fortress.

The gravity control screeched protestingly when he moved it to full repulsion from the red planet; the space stick resisted his tug for a moment, then moved stiffly. Phobos was out of its orbit, already accelerating on its long journey to the far reaches of outer space. Coler planned to send it far from the solar system, to lock the controls so that it would keep on going as long as the power of its generators held out. Probably it would leave the galactic universe entirely.

Which was as it should be.

"Look at me," came Turjen's cracked voice.

Coler could not bring himself to turn his gaze toward the black monstrosity. If only Kal had not—

"Look at me," insisted the victim of the black death.

Slowly, unwillingly, Coler shifted his eyes. What he saw caused him to blink with astonishment. The form which had been so shrunken and twisted was straightening; Kal Turjen's clothing once more was

filling out. The face above the jacket was no longer black and awry, but was lightening to bronze and taking on human features once more. Crisp black hair sprouted where no hair had been.

This was Kal, Kal Turjen! Alive! The father had returned to his cosmic grave, restoring the son. Coler whooped his glee.

The Martian, awakened, sat up with a puzzled expression on his broad face. He fumbled for a cigarette.

And Coler, looking reflectively at the bulky space suits which hung on the wall, was content. With these, he and Kal could escape the madly speeding Phobos; in the heated and oxygen-supplied interiors of the space suits, they could leave the wandering satellite to its fate. It would go on and on and be swallowed up in the vastness of the cosmos, while they—they could return themselves to Mars or reach a passing ethership if one chanced their way, using the small rocket tubes with which the suits were equipped.

The lost city now was to stay lost.

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# Scandal in the 4<sup>th</sup> Dimension

by A. R. Long

**I**N BEHALF OF my roommate, Felix Graham, who has been unjustly accused of everything from lunacy to the attempted murder of Professor Lynn Boswell, and for love of our Alma Mater, about whose fair name senseless scandal has been circulating, I wish to set down a true account of all that took place in what the newspapers have termed "The Fourth Dimension Mystery." My account is that of an eyewitness; at least of those parts of it which are not were told to me by the principal actor, Felix himself. It all began with Felix's phenomenal ability in the field of mathematics; that and the professor's research work. That it nearly ended with the professor's losing his chair at the university and Felix's being expelled is merely incidental; at least on the professor's part.

From the first, Felix had been the professor's star student. So exceptional was he that he not only turned in perfect classwork, but he frequently went to the professor's home to work with him on special experiments in the realms of higher mathematics. Such application on the part of an undergrad was phenomenal, and it held sway as the class mystery until the night of the junior prom. Then Felix appeared with the professor's very attractive daughter, Betty; and the mystery was solved.

Professor Boswell's chief hobby was the fourth dimension. It was

his pet belief that objects in, or passing into, that dimension possessed invisibility.

"Visibility flows in dimensional waves," he would argue. "Take the first dimension, that of length. We can see length only with relation to width, which at once throws our object into the second dimension. Take away width, and it becomes invisible, the same as if it had no dimension. Now let us take the second dimension, the plane. We cannot deny its visibility. The wave is rising. But now consider the third dimension, the cube. You may think you are seeing its three dimensions, but what you are really doing is combining two slightly different images or planes. The wave is declining. Notice that the dimensions have gone in two's; two invisible and two visible. And now we come to the fourth dimension." Here he would pause dramatically. "Can any one give me a reason why this should not conform to the rule of two?"

Nobody ever could, so the professor invariably won the day.

For some time he had been seeking a means whereby a three-dimensional object could demonstrate the fourth dimension. Felix, we knew, had been working with him; but whether this was due to a belief in the possibility of the project, or simply to be near Betty Boswell, it is hard to say.

One evening he returned from the Boswell home with a look on his

*Down the street they  
thundered—and women  
fainted and strong men  
grew weak.*



*Illustrated by  
C. R. Thomson*

face of mingled awe, triumph, and incredulity.

"Alec," he said solemnly, "it's happened."

"What has?" I asked. "Has Betty accepted you?"

"Not yet," he admitted, a trifle

ruefully. "Fact is, I'm afraid to ask her. I'm talking about the prof's experiment. He's found the fourth dimension, and it is the realm of invisibility."

"Tell that to the freshmen," I scoffed.

"But it's so; he disappeared right before my eyes."

"Felix," I asked suspiciously, "where were you before you went to Boswell's?"

"No, Alec; I've cut that stuff out." He was deadly serious. "When I say he disappeared, I mean it. By the application of certain mathematical formulas, a man can make himself——"

"Forget it and go to bed," I advised. "You'll feel better in the morning."

The next day Professor Boswell announced his discovery to the university. But when he attempted to explain it to his brother professors, he met with unexpected failure; none of them could grasp it. The only person able to comprehend it was Felix, who, to the professor's great delight, not only understood it, but was able to demonstrate it.

Let me here remark that I shall never forget—nor will several others—the first time Felix exercised his new learning in public. A group of the fellows at the frat house had been joshing him about what they called "The professor's vanishing act." Felix said nothing, but after making some complicated calculations on a scrap of paper, he began to pace the floor as if marking off some intricate diagram. Then, to our horror and consternation, he began to fade, go out, right before our eyes. When he returned, it was to a thoroughly chastened group.

No one ventured a comment; but the next morning three flasks were found in the trash barrel, and a chap who had been an atheist bought a Bible.

Shortly after this, Felix, having taken his fate in his hands, spoke to Betty Boswell of his feelings for her; and she, to his amazement and delight, was not displeased. In fact she gave him permission to speak to the professor upon the subject.

THE PROFESSOR, however, was not in accord with the proposal. He had no objections to Felix as a member of the human race, but as a son-in-law—well, that was different. He could not permit his daughter to marry a penniless student with no better prospects than an instructorship at the university. Felix became eloquent, and Betty became tearful; but to no purpose; the professor was serenely obdurate.

Had he grown violently angry, there might have been hope; but as it was, things looked pretty black. There is nothing more difficult to combat than a passive attitude. Felix realized this and began to go into a decline, mentally, physically, and morally.

A month passed, and things grew no better. Felix was now wearing his hair long, and was threatening to let his beard grow. I was beginning to wonder seriously if I could prevent his becoming violent before the end of the term, when matters came to an unexpected head.

We were in our room late one evening when the telephone rang. Felix answered it. Professor Boswell was on the wire. In his excitement, he raised his voice, so that I heard his every word:

"Can you come over at once, Graham? Something most embarrassing has happened. I can't explain over the phone. You'll come, won't you?"

Felix promised and, snatching my hat, was off. I now tell this part of the story as he related it to me afterward.

He was admitted to the professor's house by Betty. "Father's in his study," she whispered excitedly as he kissed her. "You'll see what's happened when you go in. And when you do, remember, Felix, it's our chance."

On entering the study, Felix

found the professor seated at his desk. Without rising, Boswell addressed him:

"It was good of you to come so promptly, Graham; I have great need of you. The fact is, I was in the act of passing into the fourth dimension when I—er—made a slight miscalculation just as I was midway. Unfortunately, it prevents my either going on or retracing my steps; so I must ask you to aid me in my difficulty by going over my calculations for me."

He rose and, with evident embarrassment, came around from behind the desk. As he did so, Felix was nearly petrified with amazement; for the professor's nether portions, from the waist down, were missing.

"You see my unhappy state," said Boswell. "Naturally I cannot appear in this condition before the public. Therefore, I must beg your indulgence——" He paused.

"You mean you need my assistance to get back to normal?" asked Felix.

"Precisely!" answered the professor. "It will take but a few minutes. You are the only person who understands my theory, or I would not have troubled you at this unseemly hour."

Felix was thinking fast. Betty's words, "Remember, Felix, it's our chance," returned to him with enlightening force.

"I shall be glad to help you, professor," he replied slowly. "But it is generally accepted that—er—the laborer is worthy of his hire."

Boswell frowned; then he smiled.

"Commercializing on your knowledge, eh?" he commented. "Not so bad, my boy; not so bad. After all, that is the main purpose of knowledge in this generation. What's your price?"

"Your daughter, Betty," answered Felix boldly.

**AST—7**

"What?" The word was a hand grenade. Felix did not repeat his answer; he realized that the question was purely rhetorical.

"You have the impertinence to come to my own house and—and blackmail me?"

"No," returned Felix. "You sent for me and asked me the price of my services. If you think it is too high, you need not employ me."

"You—you——"

The sight of the professor's body swelling with anger and gesticulating fiercely while it apparently floated in mid-air was the most bizarre spectacle that Felix ever had witnessed. He decided that he had better leave before the professor either exploded or went soaring up to the ceiling.

Betty was waiting for him in the hall. "What happened?" she demanded.

"He wouldn't give in," said Felix, "but I'm holding out."

"Good!" she approved. "He can't go on indefinitely without any apparent means of support."

Capitulation, however, was furthest from the professor's thoughts. For practical purposes, his legs were as good as ever. If he could avoid attracting attention until he had discovered his miscalculation, he would be all right. The unfortunate part was that, being halfway in the fourth dimension, he was unable to start at the beginning of the process and search methodically for the error. It seemed insurmountable.

It was plain that difficulties were going to arise when he attempted to take charge of his classes. How was he to teach that all of its parts were essential to the whole and expect his students to believe him? He solved the problem at last by going early to the classroom and delivering his lectures while seated at his desk.

THIS SCHEME worked well enough for the first day, but the second day the professor's enthusiasm for his subject betrayed him. Forgetting his unusual state, he rose to illustrate a point on the blackboard. A startled snort from the men and a frightened squeal from the coeds apprised him that all was not well. Turning severely upon the class, he demanded an explanation. He got it from a terrified coed.

"Professor," she gasped, "You've forgotten your—your limbs!"

In confusion, Boswell muttered something about his eternal absent-mindedness and slid into his chair. But the mischief was done. When a little later he inadvertently stamped an invisible foot, three men were seized with cataleptic fits, two coeds fainted, and a third had to be carried out in hysterics.

Now events of this kind cannot go on even in a big university without reaching the ears of those in authority. Accordingly, Boswell received a summons to the office of the dean of his college.

He waited until classes were changing to make his way thither. His lack of legs would be less noticeable in a dense crowd where there were so many legs all scurrying in different directions. It was with a feeling of loss, however, that he found himself alone in the presence of the dean.

"Professor Boswell," began the dean, and stopped, at a loss how to go on. As a matter of fact, he was debating the etiquette of asking the professor to be seated, considering that the professor had apparently no means of doing so. So he changed it to "Please make yourself comfortable, Boswell," and pretended to be busy with some papers on his desk.

When he looked up, the professor seemed to be balancing himself upon

one elbow planted upon a corner of the desk, while his torso floated some four or five inches above the seat of a chair.

"You—er—understand why I have sent for you?" began the dean when he was sure that he could be master of his voice.

"My physical condition, I suppose," replied Boswell timidly.

"Precisely!" The dean was relieved that the professor had taken the necessity for the offensive out of his hands. "My dear Boswell, don't you think that an explanation of your rather extraordinary state should be forthcoming?"

The professor blushed painfully. "It is due to a slight error in my experiments," he began, "an error which I shall correct eventually."

"I'm afraid it is necessary that you correct it immediately," said the dean dryly.

"But it will take time," Boswell protested. "It is a complicated process."

"Cannot young Graham help you? He understands these experiments of yours."

The professor's blush deepened. "Graham refuses to help me unless I pay his price," he admitted.

"And what is his price?" inquired the dean.

"That," replied Professor Boswell with dignity, "I must insist upon withholding, since it is a private matter of my own."

"Very well!" The dean was piqued, not so much by the professor's insubordination as by the rebuff to his curiosity. "In that case I can only ask you to make every effort to return to your ordinary state by to-morrow. Should you fail to do so, I shall feel obliged to put your case before the provost of the university."

Professor Boswell rose—or rather



his torso floated to a higher level—and left the office. He was a worried man.

Meanwhile the dean had summoned Felix.

"Graham," he said, "Professor Boswell has met with an accident in the course of his experiments. I believe that you could help him out."

"Has he sent for me, sir?" asked Felix eagerly, thinking that perhaps the professor had employed the dean as a mediator in a peace overture.

"No," admitted the dean; "he has not. Your aiding him is my idea."

"I am afraid, sir," said Felix, "that the professor would not accept my assistance."

"Why not?"

"He is better able to tell you that himself."

Baffled again! Did they think he was dean of this college for a joke? It was time somebody began to realize that he was in earnest.

"Graham," he said, "it is impossible for a school of the dignity of ours to permit Professor Boswell to go about in his present state. Unfortunately, you are the only person in a position to remedy matters. I shall give you until to-morrow to do so. If you do not, I shall feel obliged to remove your name from the rolls of the university."

**FELIX DEPARTED** in a very uncomfortable frame of mind. If he obeyed the dean, it would cost him Betty; if he did not, it would cost him the university. And without the university, Betty was out of the question. What under heaven was he going to do?

He was debating the question when Betty herself came upon him. She looked grave when he explained the situation to her.

"We must find some way of forcing father to accept your aid," she

said. "We must do something to make life in this state so miserable for him that he will consent to anything to get back to normal."

"Yes," agreed Felix; "but what? I have only until to-morrow to find and do it."

Betty looked thoughtful. Suddenly her attention was attracted by a newsboy shouting the afternoon extra, and her eyes brightened. "Felix," she asked, "have you any friends who are reporters?"

"Sure!" answered Felix. "There's Bill Jones on the *Ledger* and Ted Wilson on the *World*. Why?"

"Because," replied Betty, "they are going to help us out."

Later that afternoon Professor Boswell was visited by two young men—two of his students, probably; he never could remember all the freshmen—who asked innocent questions about mathematics while they used their eyes to good advantage. Then they thanked the professor and left.

That evening the *Ledger* brought out an extra with the startling headline:

UNIVERSITY PROFESSOR  
DISCOVERS DIMENSION  
OF INVISIBILITY.  
PUTS HIS FOOT IN IT.

And the *World* followed with:

NOTED PROFESSOR LEGLESS  
IN FOURTH DIMENSION,  
BUT STILL KICKING.

Betty would not tell Felix what the professor said when he saw these headlines, but Bill Jones told us that he called up the editor of the *Ledger* and used language that moved that expert to admiration.

The next morning a man with a little black box called to see the professor. Betty was not deceived by his story of being an instructor from

a neighboring college, but she showed him—and the little black box—into her father's study.

"Well," began Boswell ungraciously from behind the fortification of his desk, "what can I do for you?"

"A great deal, sir," replied the man, pressing the little box against the pit of his stomach. "I represent the Associated Press; and——"

"What!" The professor's visible portion shot into the air and sailed over the desk. "How dare——"

There was a click in the little black box. "Hold that; hold it just a minute!" begged the man. "I want to get another in case this one doesn't turn out well."

He did not get it. Instead, he got the experience of leaving the house with the assistance of an invisible boot.

Muttering unprintable things, the professor turned to his morning mail. His wild roar as he read the first letter brought Betty on the run.

"Listen to this!" he bellowed. "A vile, sniveling motion-picture company has the nerve to offer me ten thousand dollars for my fourth dimension 'invention' to use in their fool trick photography."

He thumped down the letter and opened another. Again he roared.

"A damned vaudeville company has the audacity to ask me to travel with them—in their disgusting act of sawing a man in half!"

Savagely he tore the letter across and reached for a third. This time he turned purple and choked and sputtered for fully five minutes before articulate speech came to him.

"This is the worst!" he managed at last. "It's—it's from a circus!"

His progress through the rest of his mail resembled a machine gun in action. Betty said nothing when he had finished; there was nothing left to say.

Later in the morning a second visitor called. Since he claimed to be a United States census taker, he had to be admitted. The professor answered his questions civilly, but with the air of a bulldog straining at a leash.

At last the man rose to go; but at the door he turned.

"Just one question about your clothing, professor," he said. "Does it become visible when you take it off at night and invisible when you put it on in the morning, or does it stay——"

He never finished his sentence. As to what stopped him, testimony differs. Some of the neighbors claimed that there was a slight earthquake; others, that some one had thrown an infernal machine into the study.

Witnesses in the street claimed that they saw the door of the professor's house suddenly burst open, and a man, wild-eyed and disheveled, flee through it as if for his life, while after him shot half a man waving frantic arms and emitting a stream of such sulphurous profanity that the atmosphere about him threatened to burst into flame. Down the street the two charged, while women fainted, and strong men grew weak at the sight.

A traffic officer, stunned by what he beheld, confused the semaphore lights, and in half a minute traffic was congested for blocks around. Some one, possibly inspired by the professor's language, sent in a fire alarm, and the clang of the city fire department was added to the commotion.

People came running from all directions. The press of humanity was becoming so great that human life was endangered, and a riot call was sent in. Presently a cordon of police forced its way through the

surging human sea to a telegraph pole at its center, halfway up which a man was clinging desperately, while at its foot ranted the upper half of another man, swearing horribly.

In a few minutes it was all over. One policeman, gripping the upper half of the professor, and another, apparently empty-handed but going through all the antics of a man trying to hold a bucking broncho, climbed into the patrol wagon. The doors were slammed shut, and amid screams of "Felix Graham is responsible for this; I'll kill him!" from inside, the wagon drove off.

FELIX AND I had just returned from morning classes when the dormitory telephone operator, who was talking to a policeman, nodded in our direction.

The policeman came up to us. "Which of you is Felix Graham?" he demanded.

"I am," admitted Felix, "but I don't own a car."

"That's all right," said the policeman. "I'm not here to give you a ticket. What I want to know is, do you know an old guy named Lynn Boswell, that says he's a professor at this college?"

"Professor Boswell of the mathematics department?" asked Felix. "Yes; I know him."

"Well," continued the policeman, "he's down at the station, charged with disturbin' the peace, and wants to see you. Come down and have a look at him. But you'd better not let him get his hands on you, or the

charge might have to be changed to first-degree murder."

Arrived at the jail, Felix was taken to the cell in which sat the professor, at last thoroughly subdued.

"Good morning, sir," said Felix respectfully, diplomatically ignoring the unusual circumstances of their meeting. "You sent for me?"

"Er—yes, Graham; I did," answered Boswell. "As you doubtless remember, I made a slight miscalculation in my fourth-dimensional calculations, which has placed me in—er—a somewhat embarrassing position. While I could find a way out of my difficulty if given proper time, the dean is anxious that matters be remedied at once. Accordingly, I shall require your help. I shall, of course—um—er—recompense you in whatever way you may see fit to demand."

It was unconditional surrender. Felix accepted it like a general and set to work. In a quarter of an hour, under his direction, the professor had become as other men. However, it was not until the dean, to whom Betty went with the whole story, had interceded in his behalf that the charge against him was removed, and he was dismissed with a reprimand.

Betty and Felix announced their engagement the following week. As for the professor, he has turned his attention to the writing of a book in which he is attempting to explain his fourth-dimension theory. He will, however, indulge in no further demonstrations.



Illustrated  
by Howard V. Brown

# The Living Flame

by Arthur Leo Zagat

*Beneath the historic, sea-flooded shaft  
on Oak Island was war and flame!*

**T**HE PIT IN which black water heaved, somewhere beyond our camp fire's glow, was a challenge, and Eric Hadding and I were here to answer its defiance. It was of immemorial age, that was certain, for there were those along the shores of Mahone Bay whose families' occupation dated back three centuries, and they had no memory of when the hole had been dug.

They called it "Captain Kidd's Treasure Pit," and babbled of millions in gold and diamonds that it contained. It was not within reason that such was the thing's genesis, for no freebooter ever would have spent the weeks of labor involved in its fashioning, no pirate could have had the peculiar knowledge required by its strange fashioning, no buccaneer would have placed his hard-won loot beyond even his own reach.



They had warned us against the shaft, those weather-bitten Nova Scotians; whispered of a curse on any who tampered with it, shaken their heads in dire prophecy that we should never see the dawn if we persisted in passing the night on Oak Island. But we were returning empty-handed from a three months' cruise along the coast of the maritime provinces, sixty miles away was Halifax and the end of our journey, and this was our last chance at what we sought.

Eric, assistant professor of history in an old university, had conceived the idea of searching for traces of viking visits to the coast of the New

*"See!" she cried. "With his great sword he fights to drive them from the flame!"*

World, had persuaded me to accompany him on his quest, had set out eagerly, convinced that somewhere along that rock-bound littoral he would find proof of his hotly held theory of a Norse settlement antedating the Genoese by four hundred years. And the results had been nil.

Nil, that is, until, stopping at Chester in Nova Scotia for provisions we had heard the strange story

of the pit on Oak Island. Thirty years before, the tale ran, two strangers from the States had appeared with a mysterious map. They had hired men to dig, had taken them out to the tiny wooded island and set them to work under a dead oak from which hung a rusted chain.

Twenty feet down the excavators had struck a level, *concrete* floor. Breaking through this they had delved farther, struck another platform of concrete, and, widening their pit, had discovered they were in a concrete-lined shaft, circular, and some fifteen feet in diameter.

Persisting, they had burrowed a hundred feet into the earth when suddenly the sea broke in and ended their labors. But it was this sudden irruption of the ocean that had furnished the final outré touch to the strange construction. For it was not a natural fault in the rocky foundation of the islet that admitted the bay, but *an artificial tunnel, concrete lined like the shaft itself.*

Our decision was quickly made. We must examine this mysterious pit, must solve the question it posed. The oldsters who had spun the yarn shook their heads ominously. There was no luck in it; of those who had dug there, none had lived the year out, all had died inscrutable, violent deaths.

Hadding's only response, however, had been a firmer setting of his jaw, and a livid reddening of the birthmark on his bronzed chest, the stain like a closed fist whose darkening warned of his rising temper. We had boarded our little launch, the *Njord*, and foamed across Mahone Bay's sunset-carmined surface without another word.

I was restless, uneasy. Eric, squatted across the fire, brooded in silence, his shock of hair startlingly blond even in the flame's orange

glare. He was seeing visions, his eyes slitted in that sea hawk's face of his, his columnar neck corded. There were queer rustlings among the dark trees and tiny plashings from the pit. Now and then, as a knot in the fire caught and flared, it seemed to me that something moved just beyond the sphere of invisibility hemming us in. At last I could stand inaction no longer.

"Bring the flashlight ashore, Eric? I've got a notion to take a look at that well before we turn in."

Hadding jerked his head to the ground at his left. "It's there. But you won't see much. Too dark."

"Right. I'll take a look-see, anyway. Coming along?"

"Might as well."

The ground about that strange well curbing was muddy, and the well head itself rotted and slimy. The water surface, about three feet down, sent back our light like a black mirror. I raised the flash to illumine the rough concrete of the shaft sides.

"Queer thing about that," I muttered. "Concrete was used in ancient Rome, but there is no record of its being known in America till the early nineteenth century."

Eric grunted. "The Norsemen used it sparingly, must have brought knowledge of it on their migration up from the south of Europe. Say!" A sudden excitement came into his voice. "What on earth's that? Move your light—over there on the wall."

I focused the beam where he had pointed, six inches below the top, just across.

"By God!" Eric exclaimed. "It is—sure enough—"

"What's the fuss?" I couldn't see anything but some rather deep scratches in the concrete, moss filled and standing out with surprising distinctness.



"Runes, man! Runes!" He was actually quivering.

"Ruins? This thing looks pretty well preserved to me."

"Ass! R-u-n-e-s. The ancient angular writing of the northern races, the Norsemen."

"Are you sure, Eric?" I quit my chaffing. "That would mean there were vikings here, let's see——"

"A thousand years ago! Long before Columbus. Confirming the old, disputed legends. Man! This will put me top of the heap! It's the break I was hoping for when I proposed this trip."

"Can you read it?"

"And how! Studied under old Sotus Bugge himself. Shut up a minute and I'll translate it."

IT TOOK ERIC longer than a minute, muttering harsh, uncouth sounds that I recognized as the primitive old Norse he had taught me as a pastime on our long journey along the coast.

At last he exclaimed: "Got it! And it's damn queer stuff, too."

"Well, spit it out."

"Roughly, here's what it says: 'Rejected by Surtur—Spewed out by Njord—Hagen descends to seek Asgard—Who dares follow braves the Norns.'"

"Poetic, but it doesn't seem to mean much."

Eric's face was aglow, and there was a far-away look in his eyes. "It means a hell of a lot—tells a story that's been waiting ten centuries for me to come and read."

"Hagen died down there. The treasure is armor, my boy, weapons of a by-gone day about which we know very little. Bones, perhaps, that can be measured and may solve a thousand questions plaguing the archaeologist, the anthropologist, and the historian."

His jubilant voice boomed out, and there was a sudden reply from the deserted wood—a mocking laugh, shrill and unhuman. We whirled to it, and momentarily my beam caught a white shape among the trees. It vanished, and Eric leaped in pursuit.

"Wait!" I yelled. "Wait for the light!"

The only reply was that unhuman laugh and the threshing of Hadding's big body. I plunged after him into a thicket of tangled underbrush, tripped over a trailing vine, slid through earth-odored loam. The sound of Eric's bull-like progress was fainter. I got to my feet, lost a moment searching for the torch, lost all trace of my friend's progress. Suddenly, from behind me, the laugh sounded again, and Eric's roar: "Stop!" I whirled, heard a splash, a thin shout, "Carl!" another heavier splash, and silence.

I was back in the clearing, but Eric was nowhere. Only a long, dragging rut in the mud showed where he had gone, and the tossing of the water in that infernal pool. Evidently whatever it was that had laughed had circled and dived into the well, and Eric, snatching at it, had slipped and plunged after. God!

I knelt on the slimy edge of that shaft, holding my beam on the water. Eric would come up in a moment—he swam like a fish—he couldn't be drowned. The agitated surface subsided, and nothing showed. He may have hit his head against the stone, I thought. But why didn't his body rise?

There were iron rungs in the shaft wall, rusted through, pointed. He might be caught in one of those; there still might be a chance to save him. I stuck the torch under the topmost rung so that its beam was thrown straight down. Then I poised on the curb, was curving

through the air—my finger tips cut icy water.

Down, down, down through blackness. Nothing but dark and the numbing chill of that water. No sign of Eric. Down, till hammers battered at my temples and knives turned in my breast. I must—turn back.

I couldn't.

I fought to hold my breath, fought till my eyes seemed forced from their sockets; instinctively, for I knew I must eventually gulp water and die. I didn't want to die, alone, in the dark. Was that light—far below? Light! Impossible! But there it was, a dim radiance to which the current swirled me down, faster and faster while I was nothing but one huge ache.

The light was all around me, green, illuminating shaft walls that slanted inward, funnellike. I shot through the tip of that funnel, bumped against rock. A hand grasped my arm and pulled me from the icy water. I—could—breathe. Oblivion swept in.

Consciousness came back with the thunder of crashing waters. I opened my eyes. Eric was bending over me, his hair dark with wetness, his clothing dripping. His sun-black face was grim with anxiety. "Carl, old man!" he shouted above the tumult.

"You ape!" I gasped. "Why didn't you wait for the light? What was the idea of—"

He grinned relievedly. "From which I take it you're all right. Did you slip in, too?"

"Slip in, hell! Think I bat around blind like you? If you were going swimming, I wasn't going to be left behind."

"You jumped in after me? Nut!" Affectionately he added: "Of all the half-wit stunts!"

I STRUGGLED to my feet. We were at one end of a narrow but comparatively high cavern. The astonishing light that pervaded it came from everywhere and nowhere, a soft white radiance that had no warmth. The air was fresh and sweet. Beside us, thundering down through a hole in the roof, was the swirling current that had brought us here. It crashed along the slanting terminal wall of the cave in a self-scooped channel, plunged whirling and hissing and foaming into a deep basin in the rock floor, and rushed away, a wide and turbulent stream, to lose itself in the dense forest of grotesque stalactites that blocked our view. On either side of this underground river was a space and dry terrain some ten feet wide.

Till now we had been shouting above the noise of the fall, but I discovered that I could pitch my voice under the clamor and be heard. "Eerie place, isn't it?"

"Everything seems luminescent, down here. Some form of radio-activity, maybe."

"And there is something else, Carl. I—it sounds silly—but I have an uncomfortable sensation of being watched."

I shook my head. "Nonsense! There couldn't be anything living down here."

"Nonsense, is it? It was something alive that dived into the pool before me, Carl."

A little chill ran up my spine. Then I grinned. "If it could get upstairs, we can."

"We'd better find the way damn quick. Before we get hungry and thirsty."

"Well," I said, "the way out isn't up that shaft."

"Devilish strong current down here, isn't it? Felt like the whole sea was on top of me. Which it was,

of course, coming in through the tunnel. How do you account for the fact that the well up there is filled in spite of this hole at its bottom? That's a puzzler!"

"Easily. The outlet here is not as large as the inlet from the sea. It's like letting water into a sink bowl faster than the drain can carry it off, only in this instance the upper level will never rise above that of the sea."

Eric, however, was paying no attention to me. He was tensed, suddenly, watching intently. I followed the direction of his eyes, through the impenetrable ranks of the drip formation.

"What is it?" I grunted.

My friend's lips hardly moved. "Thought I saw something off there. Something moving. Keep quiet."

Now I, too, was aware of that indefatigable but unmistakable sensation of unseen eyes on me. I squirmed under it, staring in turn through the serried, crystalline columns that seemed so deserted. And then—

"Good God!" Eric groaned. "Do you see it, too, Carl, or am I batty?"

"I see it," I said grimly. "Guess we're both dreaming."

It was the final touch of unreality, that which appeared from behind a cloud-white, glowing pillar about twenty feet away on our side of the river. I pushed a fist across my eyes and looked again. But it was still there—a man. A big-headed, miniature-bodied man, not two feet tall.

He stood there on wee bent legs and grinned at us. And we stared back, unable still to believe we really saw him. He had a great hooked nose, surmounted by eyes that were twinkling black pin points. His hair was a dull black, coarse, and somehow animallike even from this dis-

tance, and there was something feral, too, about his long, sharp chin.

It was what he wore, however, that held us staring, unable to move. This troll, this grinning dwarf, was helmeted, by all that was holy, with a conical, silvery casque to either side of which a golden wing clung, and his wee body was clad in a glittering coat of chain mail. Knee-length, the meshed, metallic fabric fell, belted and skirted, and below it his pipe-stem legs were covered by crisscross leggings of scarlet silk.

To complete the picture, a shield was strapped to his left arm, no bigger than an oversized dinner plate, and in his doll-sized hand he held aloft a three-foot spear.

We gazed pop-eyed at the toy-size warrior who grinned amiably at us. At last Eric grunted, straightened, and raised both hands above his head, palms outward. Understanding, I imitated him.

## II.

AT THIS immemorial sign of friendship the dwarf clanged his spear against his tiny shield and started into motion, trotting straight to us on those wee legs of his. About two feet away he paused, bowed, and said something in a high, shrill pipe.

Again an exclamation of astonishment escaped me, and I saw Eric's face light up as with an inward fire. For in a thin, child's voice the astounding gnome was speaking pure old Norse, the language of the vikings, the language of the runes overhead. Eric replied in that booming voice of his.

I must have presented a ludicrous sight, standing there with open mouth, my eyes shifting from the tall form of my friend, gigantic seeming in contrast with the animated doll caparisoned in armor that

might have been ravished from a museum.

As nearly as I could make out, the little man was demanding, politely but firmly, that we accompany him to some unnamed destination. Eric pressed for information, as to who and what he was, and as to where he wished to take us. His name was Arnulf, he said, but to all other questions he returned only the reply: "Later. When we arrive you shall learn."

At last Hadding turned to me. "What say, Carl? Do we accept his invitation?"

I hesitated. "He seems friendly enough, and we can't get into any much worse mess. But——"

"But what?" Eric's mouth was suddenly a thin, straight line. "Friendly or not, I'd go to the gates of hell with him. He talks the old Norse. The armor he's wearing, the casque, the *brynnie*, are authentic. I'll swear to that. They're miniatures of stuff I've seen dug up from mounds and *Skaale* ruins in Denmark and in Greenland. And you're wondering whether it's safe or not!" There was contempt in his voice. "Stay if you want. I'm going."

"Try and leave me behind." I grunted, holding my own temper in leash. "Just try."

Hadding gurgled an assent to the dwarf, and Arnulf bowed again. Then he turned and stalked off along the river bank, his dignity somewhat spoiled by his diminutive size. We followed in single file, twisting in and out among the translucent pillars of the drip formations, climbing over débris that were these same columns broken by some earth heaving in by-gone ages, always with that strange, cold, sourceless light about us and the roaring of the cataract in our ears.

We had progressed thus for what

I judged to be about a half mile, when suddenly our guide halted, motioning to us to do the same, and appeared to be listening intently. Then he whirled to us and called out something I did not catch. Eric seized my shoulder, forced me down with him behind a huge, rounded fragment of stalagmite that was near by.

"What's up?" I exclaimed.

"Don't know," Hadding grunted. "He said to hide, quick. Didn't seem scared, though."

"I'm going to look." I was still uneasy, still distrusted the little man. Was this some trick to permit more of his fellows, perhaps, to catch us unawares, to overwhelm us by their very numbers? I got down low, poked my head cautiously beyond the shielding stone.

There was Arnulf, himself bent low behind another bit of rock. And beyond him——

There seemed no limit to the surprises this place held for us. Beyond the gnome's covert I saw another figure, almost stranger than Arnulf himself, certainly more fearsome.

This one was no dwarf, though rather stunted, and he was naked except for a breechclout. He moved silently, slinking toward us with a smooth, effortless stride, the stride of a savage. He had the high-cheek-boned head of an aborigine, flat-topped, with tiny squint eyes, thick, protruding lips, and long black hair. His skin was coppery, and seemed to have an oily film over it; there was a long bow in his hand and a quiver of arrows slung over one sinewy shoulder.

"Eric, look at this!" I whispered.

"My God, Carl. A Beathic!"

"A what?"

"A Beathic—Indian to you. One of the original race that peopled

Nova Scotia before the white man came."

"What's this place? A sort of old men's home for obsolete races? Jumping Jehoshaphat, look at that!"

As the savage had come opposite Arnulf's covert, the little fellow leaped into view, spear poised, shield upraised. He sprang again, and before the Beathic had time to so much as give vent to a startled cry, the dwarf's tiny spear was transixed in the savage's throat. The aborigine toppled, almost crushing his wee conqueror in his fall, and lay motionless.

"Lord, but he's spunky!" I exclaimed.

The little man clambered atop his victim and tugged at the protruding shaft of his spear. And suddenly there was a howling ring of savages about him, appearing apparently from nowhere. They encircled him, each with an arrow fixed in a taut bowstring, surrounded him with a bristling chevaux-de-frise. But the wee warrior looked up calmly, and there was neither surprise nor fear in his face.

One of the Beathics, distinguished from the rest by a horrific painted mask in yellow and glaring red, said something I could not make out, but he sounded like those little firecrackers one shoots in strings on the Fourth.

Arnulf's lip curled, and he replied: "The strangers are safely hidden, dogs, far away from here. Threaten me not, for the most devilish of your tortures will never wring their secret from me. And beware the vengeance of the Horder folk."

"Good boy!" Eric grunted. "He is trying to save us."

The Beathic leader contorted his features with what might have been intended for laughter. He splut-

tered something, and two of his fellows stripped the strings from their bows. Stepping forward, one of them lashed the little fellow's wrists behind his back, while the other hobbled his ankles so that he could just shuffle along. Arnulf bore all this in haughty silence, but every line of his tiny body breathed defiance.

"We can't let them do that," I jerked out. "Let's hop them, Eric."

"Wait! They're alert now, and outnumber us five to one. We'll follow them till we get a better chance."

THE PAINTED-FACED aborigine creaked another order, and the group crowded around their captive. They started off, bearing away from the stream. Arnulf did not have to be pushed, apparently he had decided struggling would be useless, but the savage band progressed slowly because of his lashed feet. They made no effort to move quietly, apparently taking at its face value Arnulf's assertion that we were nowhere near. Thus it was easy for us to follow them unobserved, and we slid silently through the dense clusters of translucent pillars, guiding ourselves by the clatter they made.

We had not noticed that the cavern long since had widened, and it was some time that we progressed thus. Then a shout from the Beathic band, a shout clearly of triumph, was answered by a call from far ahead.

"We are done for now," I grunted reproachfully. "They're meeting others, maybe their main encampment, and we'll never get him away."

Hadding's brows were knitted. "Seemed to me like only one answering them, Carl. Let's get closer and see what's up."

We moved a little faster, but still cautiously, and I glimpsed the procession. They were filing down a steep decline, into what seemed a deep pit, from the center of which arose a monkeylike chattering. And suddenly a scream knifed through that chattering, a woman's scream. A woman's wail, hysterical, making words in the old Norse. "Arnulf, they have you! Then the Great One——"

And then came the little warrior's voice, calm, soothing: "Nay, Lady Gerda, this slime have yet to face the wrath of the Great One. But how came——" The sound of a heavy hand on flesh cut the sentence short.

Arnulf was dripping words that were icicles of poison; cold, venomous: "Do that again, or lay one filthy finger on the Lady Gerda, and the Great One will flay all the Yotun folk with scorpion whips."

Whoops of derision, horrid rattling of savage laughter, answered him. "Yotun no fear Great One, no fear Horder folk. Take woman, take you, same way take pleasant land from little people. We Horder folk soon." Broken old Norse came in the spluttering, grating voice of the savage chieftain. "But you tell us first where strangers."

My eyes sought Eric's, two balls of blue flame.

"Carl," he whispered. "There's a woman in the power of those filthy creatures."

I shrugged. "They are all below the pit edge. It is safe to get closer, I think."

We were on our bellies, crawling, squirming along the ground to that pit edge. Little stones rattled under us. But they didn't hear us, absorbed as they were in baiting their prisoners. We were looking down at them, and they didn't see us.

There were eleven of the savages squatting on grimy haunches in a half circle about their prisoners, the ten that had captured Arnulf and another. The little fellow was lashed to the stump of a stalagmite, helpless, but there was no surrender in his face or in the erect posture of his tiny figure; defiance, rather. And, tied to another thin pillar of slimy rock, blue eyes flashing with anger, with repulsion, was the slim figure of a girl. I felt Eric's body quiver, pressed against mine, as he saw her. And my own throat went dry.

She was tall for a woman, tall almost as myself, and her long robe of white silk, tight pressed by its lashings, more than hinted at the perfect lines of her body. Her hair was spun gold, close helmeting her high-held head, and flowing to the ground in two arm-thick golden braids. There was a white austerity in her face, her nostrils flared indignation, and her red lips were compressed to a thin line of wrath.

That face did not present the fine chiseling of classic beauty, but its broad planes, its sturdy modeling, was to me far more attractive than the most perfect Grecian mask. There was intelligence in her high forehead and strength in the cast of her jaw, yet even now that countenance was somehow tenderly feminine.

There was an almost inaudible sound from Eric, a gasp, and I pulled back, twisting to look at him. He lay absolutely motionless, his gaze fixed on the girl's face, drinking it in. I saw another quiver run through him, and his big hands slowly clenched. I touched his shoulder. He started and dislodged a pebble that slithered down into the pit, its tiny rattle a roll of thunder to us.



A BEATHIC heard the noise, sprang to his feet, with a guttural exclamation, pointed and snatched for his bow.

"Come on!" Eric shouted, leaping down, straight down into the middle of that ugly band.

Somehow I found two fist-sized stones in my hand, found myself, with no conscious volition, in mid-air, landing in a cluster of fetid, naked bodies. I flailed at a bestial head, felt bone crunch sickeningly under my fist, whirled to the next shrieking savage, and struck again. I heard Eric yelling something unintelligible, got a glimpse of him, red-eyed, mouth open in a bellow, blond hair streaming, huge fists rising and falling, bashing in a twisted, savage face.

We had come upon them so suddenly, so savagely, that three of them were down before a retaliatory blow was struck. But then they were fighting back.

A stinking form ducked under my smashing fist, closed with me, wrestling. The unclothed skin was sweat-covered, slippery. He snarled animallike, and his teeth sank into my sleeve. My fist beat down on the back of his exposed neck; there was a snapping sound, and he fell away. There was a knee in my back, hands clamped on my throat. I couldn't turn. I ducked forward sharply, and the garroter catapulted over my head, smashed against a rock.

Another shrieking Beathic had plunged at me, a sharp-pointed arrow in his hand, stabbing. My fist crashed into his face, and it exploded in a bloody smear. I whirled to meet the next attack. But there wasn't any. The pit was a shambles.

Eric grinned at me. "One got away, Carl. But the rest won't do any kidnaping for a long time. Good scrap!" There was a long,

bleeding scratch across his cheek, and a mouse over his right eye. Otherwise he was unhurt.

"Swell!" I rubbed my aching throat. "Did you——"

Hadding, however, wasn't listening. He was striding over to the girl, to Lady Gerda. And she was watching him come. I blinked when I saw her expression. It wasn't gratitude, admiration alone; that lighted it with an inward fire. It was as if the bonds about her were not there, the contorted barbaric bodies underfoot, myself, Arnulf, nonexistent. Only Eric mattered, striding toward her lithely. I saw his face, too. For them this might have been a trysting place appointed when the world began.

"Release me, stranger with the black hair."

Arnulf's call pulled my eyes away from the couple. I got over to him, sawed him free with the edge of an arrowhead. He snatched the arrow from my hand, and, before I knew what he was up to, plunged it into the breast of an aborigine at my feet.

"That one still lived," he muttered, and looked around at the others.

I grabbed him. "You little devil!"

"Let him alone, Carl," Eric called. "He is right according to his lights. The vikings left no living enemy on the field. Lord knows what the beasts would have done to our corpses if they had licked us."

I released the fierce little fellow.

"Wait here. I shall return." He scuttled up the pit side and was gone.

They didn't talk, Eric and the girl, just stood and looked at each other. It sounds inane, set down in black and white, but it was not in me to laugh as I saw them. Rather, I burned with a great envy.

Arnulf was back. He stood on the

pit edge and called: "Come, now, if it please you, Lady Gerda. I have my shield and spear and can defend you and the strangers against all perils."

"The bantam would do it, too, if he could," I muttered to Eric, keeping my face straight. "There sure is plenty of guts tied up in that little package. By the way, aren't you going to introduce me to the lady?"

He jerked down out of the clouds with a start. In rather stilted Norse he said: "This is Carl, my companion and friend, Lady Gerda."

The corners of the girl's mouth lifted in a faint smile of acknowledgment. "We owe you much, Arnulf and I. But I shall leave it to the Great One to express fittingly the gratitude of the Horder folk."

"Hasten!" Arnulf shrilled. "Or the Yotuns will bar our passage."

We scrambled out of the pit. Although Eric seemed to have forgotten everything but the girl, a thousand questions trembled on my lips. But as we reached the top, a long horn blast sounded from the distance.

"Arnulf!" Lady Gerda exclaimed. "'Tis Rolf's horn. The Great One comes."

"The Great One comes," the dwarf repeated, and there was a lift in his thin voice, a curious awe.

Both turned in the direction of the hoarse sound.

The girl funneled her hand at her mouth, and called: "To me, Horder folk. To me."

Again the trumpet sounded, and close upon it a curious procession came in sight.

### III.

A HORDE OF dwarfs, armored and helmeted, appeared and disappeared in the gaps between the col-

umned drip formations. At their head was a little fellow whose coat of mail was of gold, whose casque was surmounted by a dragon's head worked in silver, and about whose neck hung, by a gold chain, a ram's horn mounted in a delicate filigree of gold and silver, incrustated with precious stones.

My eye, however, went to the figure just behind the trumpeter. He would have been tall even in the upper world, but here, among the tiny-statured gnomes, he towered colossal. A true viking, gold armored, gold helmeted, a silver eagle for his crest that seemed poised for flight, so finely wrought it was.

His yellow hair fell in curls to his huge shoulders, framing a ruddy face in which piercing blue eyes were rimmed by fine wrinkles that told of gazing across stormy seas, framing a stern, sharp countenance in an aureate glow. Mouth and chin were hidden by a drooping mustache and a huge blond beard, yet, strangely enough, I felt that I had seen those rough-hewn lineaments somewhere before.

The viking saw us, saw Gerda. He scowled and strode past the trumpeter, his great sword sweeping out of its scabbard. My feet shifted, and I tensed for flight.

But Gerda called: "Friends, O Hagen! They are friends. Put up your sword." She advanced to meet him.

They came together a little before us, and he bent to her. "Gerda, you are safe?" He kissed her on the forehead.

"Safe, Hagen, thanks to these whom you threaten with that great blade of yours."

"All Horder is up in arms, child. Word was brought to me that you were a captive of the Yotuns."

"And so I was, so Arnulf was.

But these strangers, who come I know not whither, slew the savage band with their bare hands and rescued us. You must thank them, Hagen."

He glanced at us, but continued to speak with her: "How came they to take you, Gerda? Heimdal swore that you did not pass the gate."

"Nor did I, so far as I know. I was spinning in my *jungfrúbúr*, alone, when in an eye blink I was stifled under a crowd of odorous Yotuns——"

Eric's hand clamped on my shoulder, his voice was hoarse in my ear: "The *jungfrúbúr*; she said the *jungfrúbúr*."

"Shut up!" I grunted. "I want to hear this."

"—gagged, bound, blindfolded before I could call for help. They carried me off, nor could I tell anything of our road till the blinds and gag were removed and I found myself in yonder pit. They lashed me to a pillar, Hagen, with their foul hands." She shuddered. "They giped at me, telling how they soon would bring you to join me."

Hadding was still whispering agitatedly: "She was alone in the *jungfrúbúr*, Carl. Isn't that what she said?"

"Yes." I shrugged. "But what's the excitement about that?"

"Don't you see? The *jungfrúbúr* is the house of the single women. She isn't married, then. She isn't his wife!"

Hagen's cheeks had flushed a dull red, and his eyes were troubled. "—must have found a new way into Horder. Heimdal says none but Arnulf has passed the gate, and Heimdal is to be trusted. Peril is afoot, Gerda; we must hasten back. They may even dare a surprise attack in force."

He straightened and turned to the

gnomes, who had halted, resting their spears in a roughly military fashion. "Leif," he thundered, and a tiny warrior raised his shaft in salute. "Go in all haste with your *hereder* to assist Heimdal at the gate. Be alert, vigilant."

Leif bowed, shrilled a command, and, with disciplined haste, a hundred pygmies trotted off in the direction from which they had come, their little shields clanking against their mail.

"Haakon, Sverre!" The giant Northman's voice fairly crackled. "Speed to Horder-tun. Take my command to Harald to man and launch the dragon ships and guard the borders of the inner sea. Bid all the Horder folk to arm and stand ready for my next commands. Go by separate routes."

This order, too, was smartly executed. Further crisp commands came from the bearded viking, with a certitude that showed him to be a master of the military art. In a few minutes the dwarf detachments had taken up their posts, flanking parties to right and left, a strong detail far behind, an advance guard in skirmish formation ahead, and the main force compactly surrounding Hagen, Gerda, and ourselves.

At a word from his towering chief, Rolf, the trumpeter, wound a call on his horn, and the army—it was no less—was on the move.

Hagen now turned to us. "I am somewhat lacking in courtesy to you," he boomed, "but other matters pressed. The gratitude of the Horder folk, and my own, shall be fittingly given when I have disposed of those insolent savages."

Eric bowed. "We merit no thanks." Somehow his voice had taken on a new sonorousness, his bearing a new dignity. "So short a struggle did not warm our blood."

"Spoken like a true viking! And your appearance, too, is Norse of the pure blood, though I don't recognize your manner of dress. But your companion, he is short and dark—of the Gaedhill, no doubt. Great fighters they, too. I remember one battle we had with them at Dyfflin, when five thousand viking souls were taken to Valhalla by the Valkyries before the field was won. Of what fylke are you? Egder, perhaps, or Raumer, where I have never been?"

Eric looked puzzled. "Neither am I Norse nor my friend Irish. We are Americans both."

It was Hagen's turn to wrinkle his brow. "Americans! I know no such nation. In the south, perchance?"

Hadding muttered an aside to me: "There's something queer here. We'll have to step carefully." Then aloud in the ancient language: "You have heard tell of Vinland and Markland?"

The other's face cleared at these appellations of fabled viking settlements in the western hemisphere. "Good cause have I to know those names. It was somewhere near Markland that Njord spewed me out after Surtur had rejected me, somewhere near Markland I found what I thought was the way to Asgard, and descended, still weak from my wounds, seeking Odin's hall."

My scalp prickled. The man was talking as if it were he who had engraved the rune far above, yet that had been done a thousand years before. It wasn't possible that—

I saw the skin tighten along Eric's jaw. Had the same thought occurred to him? But Hagen was looking at him expectantly as we strode along.

"You have been long gone from the world," Hadding ventured, pumping him. "And many strange things have happened since."

The blue eyes under the golden helmet brooded. "Aye, long it is since I saw the sun— But we come to the gate," he broke off.

ABSORBED IN the conversation, I had not noticed that the roof of the cavern had lifted, or we descended, so that instead of the dense thicket of columns through which our march had begun there were serried ranks of tall, conical stalagmites along the floor, and above a vast ceiling of thick-crowded stone icicles. From far to the left came the dim roar of the stream whose origin was in the sea above. Ahead of us the gnomes were scrambling down a steep declivity.

We followed, and suddenly were up against a high rock face, a grim, gray barrier of granite along which the Horder folk were ranging themselves in long files. Coming toward us I recognized Leif, commander of the *hereder*, or company, Hagen had dispatched ahead.

"All is quiet, Jarl Hagen," he shrilled in the very small voice of all the little men. "No one has attempted the gate save Haakon and Sverre, your messengers."

I looked for this gate of which they spoke, but the rock wall loomed vertically above us, rising higher and higher till it met the fringed roof of the cave. To left and right it stretched to a distance I could only guess at, and there was not the slightest break in its blank grimness.

"I'll be blessed if I can see any gate," I grunted to Eric. "There doesn't seem to be any way of going on."

Hagen advanced close to the cliff, however, and did a curious thing. He pulled the shield from his arm and placed it on the ground, concave side up, balancing it carefully on the pointed boss at the center of

its outer face. Then he stepped back from it, arm's length, and tapped it with the flat of his sword.

The buckler, delicately balanced as it was, hardly dipped at his deft touch. But instantly a gonglike note welled from it, a deep, booming tone that did not die away, but swelled evenly till the whole cavern seemed to be filled with the sound.

"Carl! Look at that! Look at the rock!"

Eric's ejaculation pulled my eyes away from the vibrating shield. I saw that a section of the granite wall was sinking, slowly sinking, into the ground. Ten feet high, and five across, an aperture appeared, gaping black and forbidding. There was an earth-shaking thud, and the top of the dropping section was level with the ground. Across the opening an almost invisible gossamer curtain hung, a fine web that pulsed in slow undulations, rhythmically. There was something indescribably menacing about it, something obscenely alive.

"Good Lord!" I muttered to Eric. "What on earth is that?"

I spoke in English, but the girl must have sensed my meaning, for she said something in an undertone to Hagen, and, when he nodded in assent, picked up a rock fragment and tossed it against the web. There was a lightning-swift flash across the opening, a metallic clang. Along the cave floor at the base of the veil a long white line of powdered stone had suddenly appeared. I shuddered to think of that flashing knife slicing down through a human body.

"Pleasant trap, that!" I exclaimed. "Even if some one stole a shield and got the door open they wouldn't get far!"

At a gesture from Hagen, Rolf stood spraddle-legged in front of that devilish curtain and blew a fan-

fare on his ornate horn. From somewhere within another horn answered him.

"Open to the Great One!" he shrilled. "Open to the Jarl Hagen, O Heimdal, guardian of the gate."

And from the darkness a thin voice came: "The gate opens to the Great One that he may enter his fylke or Horder."

The spidery web wavered and drew aside. Hagen advanced, with Gerda at his side, and we followed. Almost immediately we were in pitch darkness. No, not quite. Ahead there was a glimmer of light, a formless nimbus at first. It brightened and grew more definite in outline, and I realized with a start that the glow came from Hagen himself, from his face, his hands, his bare knees.

The patter of many little feet sounded from behind, and, turning, I saw that the army of dwarfs was following us; saw, too, that each of them was glowing with the same strange phosphorescence that made of their ruler an uncanny wraith.

By the light they emitted I saw that we were progressing through a narrow tunnel in virgin rock, an artificial tunnel, for the marks of tools were plain. And the millions of tons of stone and earth that were overhead seemed to weigh down upon me, to smother me by its very ponderousness. Out in the cavern there had been at least spaciousness; here I seemed to be in a living grave. Then the tunnel twisted, an oblong of light appeared ahead. Silhouetted against it were the forms of Hagen and Gerda. We were through.

I blinked, gasped. As far as the eye could reach, there stretched before me a rolling, grassy plain, checkered by planted fields. A dirt road began at our feet and wound to the middle distance, where I could

make out a cluster of tiny houses built of logs and thatch-roofed.

Beyond this a hill lifted, atop which were three structures that even from here appeared gigantic by contrast with the doll's village below them. To the left the glinting, green waves of a sea stretched to a misty horizon.

My first thought was that we had come out into the open, into some hidden land that the world had never discovered. Then I saw Eric looking up, and I followed the direction of his gaze, expecting to see the sun in a blue sky. Nothing could have been further from the truth.

Springing out from the cliff, five hundred feet or more above us, a great rocky dome arched up and away till it was lost in the same gray mists that limited the sea. We were still underground, in some vast bubble fashioned while the earth was yet a yeasty, seething mass. But grass and wheat needed the sun's radiance—the air was lucent with a soft white light—

"I can't understand it, Carl."

Hagen, who had stepped aside with us to permit the dwarf regiments to pass, boomed a command, and the tiny cohorts halted. "There is something wrong," he growled to the girl. "Where is the guard that should be at the inner gate? Where are the dragon ships?"

She had not time to reply when the light began to fade. A murmur passed through the ranks, a tremor of fear, and Hagen ripped out an oath: "By Thor! The flame—the flame darkens before its time!"

What he meant, I did not know, but there was something in his tone that sent a chill of dread coursing through me. An uncanny gray shadow seemed to be dropping over the land, the air was growing colder by the second. Thin screams came

from the staring dwarfs, and Gerda's face paled.

"It cannot be," she whispered. "The flame—'tis life itself."

From somewhere in the ranks a voice shrieked: "The strangers are doing this! The strangers are darkening the flame!"

THE HYSTERIA ran through the mob like wildfire. "They are Yotuns! Spies! They darken the flame! Kill them! Kill! Kill!"

The formations broke, and the gnomes were seething all around us, their faces contorted with fear and hate, their spears an upraised, tossing sea.

I leaped backward to get the protection of the wall behind my back. Eric joined me, touching shoulders. A spear flashed through the air. Only a swerve of my head avoided its barb. Another struck the stone, wide of its mark. But in a few seconds they would fill the air with a storm of death.

"Stay them, Hagen! Stay them!" Gerda's scream cut through the tumult, and with it she leaped to us, was in front of us, arms outstretched, quivering. "Is this the gratitude of the Horder folk, that you would slay my saviors without a chance for defense?"

The spears could not reach us without harming the girl, and even in their frenzy the pygmies held back their arms. But the shrill cries kept on: "Slay the darkeners of the flame! Kill the Yotun spies!"

Hagen's bellow drowned them out. "Silence, Horder folk!" His great sword was out of its scabbard. "Mine is the right to vengeance on the darkeners of the flame!"

He twisted to us, and his face was black with wrath, his eyes blood-shot. "Stand aside, Gerda! Theirs was but a trick to pass the gate. Yo-



tuns they are, and sorcerers who must die ere the flame dies. Their lives or ours—there is no choice!”

An animallike squealing greeted this from the tossing, rabid mob: “Kill them, O Jarl, or we perish. See, the dark is upon us.”

Hagen cast a swift look over his shoulder, and though the fierceness of his expression did not relax, a furtive fear peered from his eyes. The shadow had deepened to a murky twilight, the sea was a leaden gray, and all color had drained from the meadows. He twisted back to us and roared again: “Stand aside, woman, before it is too late!”

“My life before theirs,” she replied, tossing her head. I heard a sob catch in her throat. “Is this Norse justice? I demand for them trial before the *lagthing*, or *holmgang*.”

Her defiance checked the viking. “No stranger may be heard before the *lagthing*. But trial by the sword may—”

“May be demanded only by a man of Horder, whether for himself or an outlander.” This was little Rolf speaking.

“And am I not of the Horder folk, little man?” Gerda lashed out at him. “I demand *holmgang* for the strangers.”

Hagen, however, was sure of himself again. “One of the Horder folk you are,” he thundered. “But not a man. Stand aside!”

“Jarl Hagen! Jarl Hagen! I am a man of the Horder folk, and I demand *holmgang* for the strangers. I, Arnulf, *herse* of the outer marches.”

The viking threw up his hand. “They have gone mad. But *holmgang* it must be, having been demanded. *Holmgang* it must be by the law of Horder. I choose the yellow-haired one to fight for both, and by the one eye of Balder—”

He was interrupted by a shout from the outskirts of the throng: “Sverre comes! Sverre comes, Jarl Hagen, sorely wounded!”

Hagen whirled. Staggering along the brown road was one of the tiny messengers he had dispatched to arouse Horder, his face a bloody mask, his spear a shattered stump, his shield gone, and arrows hanging from his mail, his legs, his arms. A way opened for him through the mob, and he reeled to Hagen’s feet.

“The flame!” he gasped. “Yotuns—darkening it—hundreds of them—sunk dragon ships—Harald killed—Horder folk massacred—” A great gout of blood spurted from his mouth, drenching his tiny figure. “Hurry—or too late—” bubbled through it. He crumpled slowly to the ground, quivered, and lay still.

“Arnulf! The prisoners are yours to guard with your *hereder*!” Hagen snapped. “Your lives are forfeit if they escape. The rest of you follow me to save the flame.” There was no mistaking the strength, the command in his voice, no denying it. “Forward! Forward, men of Horder!”

#### IV.

THE WILD MOB was an army again, was streaming across the gloomy landscape at the double quick in ranged *hereders*. And at their head was Jarl Hagen, a gigantic figure of vengeance, glowing in the now deep dusk with the uncanny luminescence of these strange people.

We stood staring after them, Eric and I, the Lady Gerda, Arnulf, and the hundred dwarfs of his company.

Hadding was the first to recover speech. “We thank you, Lady Gerda, for our lives.”

She looked up at him, and her eyes were moist jewels. Her white hand

was at her breast, and the slow blood mounted to her white cheeks. "I but paid my debt," she breathed. "Besides, I know you are no Yotun, no sorcerer."

Arnulf interrupted: "Your lives are not saved, strangers, but lengthened for a tiny space. Jarl Hagen's mastery of the sword assures that. Nevertheless, Lady Gerda, we must go at once to the *Taarn*, where the prisoners will be safe till Jarl Hagen returns for the *holmgang*, and where we can defend you with some chance of success should, Odin forfend, the Great One be defeated."

She nodded. "That will be best."

The *herse* piped an order to his command. They formed a hollow square about us with well-trained precision. Their spears were slanted outward, their shields upraised and overlapping edge to edge. With set faces and fierce eyes, they presented a truly formidable appearance. Arnulf pushed through the ranks to their head, snapped another command, and we were trotting along the road, fast as the pygmies' legs could move.

The progressive fading of light had ceased just on the point of complete darkness, but a pall of dread blanketed the countryside. So unreal, so nightmarish was the eerie luminescence that I seemed to be moving in a phantasy, and all emotion fled, so that I was conscious only of a stolid, uncurious acceptance of what was to come.

I had said nothing since we debauched from the gateway tunnel, could say nothing now. Nor was either of my full-size companions any more vocal, though I suspected their silence to proceed from a different cause. Even as they ran, their heads were turned to one another, as if loath to loose even the tie of sight.

A high tower appeared from behind an undulation of the plain; round, and fashioned of hewn-stone blocks. One or two slitted windows pierced the thick walls, and a heavy, iron-riveted door was ajar. It reminded me of something I had seen before—then I remembered. Longfellow's Round Tower at Newport! It was an exact counterpart. We made directly for it.

With the door closed, only a little light seeped into the lower room of the tower, just enough that I could make out Gerda and Eric very dimly. Through the wall we could hear the rattle of spears, and knew that Arnulf's men were drawn up without to guard us.

"Who are you?" The girl's voice broke the silence. "Whence do you come?"

"We come from the world above, my lady," Eric replied.

"The world above?" There was puzzlement in her tones, and something else. "Then there is a world other than Horder and the outer cavern; a world where all men are giants like you and Hagen and me, where there are other women, where there is a great round fire in a distant blue dome instead of a leaping flame."

"That there is. A beautiful world!" Eric's tone was tender, answering the yearning in Gerda's.

"I have dreamed of such a world, longed for it. But when I ask Hagen about it, he laughs bitterly and evades my questioning. 'Horder is your world, child,' he says. 'For always. Give up that silly dream of yours.'" A repressed sob roughened the richness of her voice. She paused a moment, went on: "And now you come from there, come as the flame is dying. Oh, Eric Hadding, will you take me with you when you return?"

"If ever we do return. We came hither, my lady, by a passage through which there is no way back."

"But there must be a way to the upper world. There is, I tell you. The Yotuns know it. Arnulf has brought me flowers he captured from them, and little animals such as we know not here in Horder, nor do they come from the outer cavern. The well by which Hagen came is forever blocked by the artifice of the Horder artisans, but there is another passage!"

A thrill of hope ran through me. "Did you hear that?" I cried. "Eric, there's a way out, and we'll find it!"

"How, Carl? We're prisoners here, and even if those fellows are pint size, we can hardly fight our way through them unarmed. Certainly not if we take the girl with us, and I'm not leaving her behind."

"I suppose not. You're hard hit."

He ignored that. "At any rate, I want to find out more about this set-up. I don't understand it, and I'm going to before I think about getting out." He turned to Gerda, cutting off any further argument from me. "What is this flame of which you all speak so reverently?"

"The living flame?" Awe crept into her voice. "The living flame that is life for Horder? It— But come, and perhaps I can show you."

She fumbled to the center of the round room, found a vertical ladder that sagged under our weight. We climbed through dimness to the tower top. A window here was slightly wider than that below. She peered through it.

"The flame still lives. But it is dim, dim."

FROM THIS height we could see over a low shoulder of the hill. Beyond, not a half mile from us, there

was what seemed a pool of white fire above which leaped a lambent flame. There was a colonnade of pillars about it, pillars that towered a hundred feet from a circular platform to which broad steps rose, and in the open space about it there was a confused, struggling mass. Light glinted on the pygmies' shields, tossing in combat. I saw a cloud of arrows rise from a clumped knot of Beathics. I could make out Hagen's tall figure, surrounded by savages, his long sword sweeping, sweeping in an almost rhythmic whirl of destruction.

"See, the flame is but the height of a Horder man, and it should ride far above the columns. If it fall lower, Horder falls."

I could understand that. I realized that this was the sun of this strange world, that Hagen and his dwarfs were fighting for its protection as we should fight in desperation an enemy threatening to blot out our sun.

"But what is it, Gerda?" Eric pressed her. "How is it fed?"

"None feeds it, nor is it fire such as can be fed. Though it has no heat, it warms the land. Sometimes it sinks low as it does now through no external cause, and during that time of dark one may sink his body in its pool, and, doing so, gain eternal life. This all the folk have done before the oldest saga, and Hagen."

"Then—you mean—they live forever?"

"Forever, unless killed by wounds or accident."

"But that seems impossible."

"Eric, I shouldn't say that," I broke in. "Remember, we don't know the secret of life, or why it seems to have an inevitable end. The latest theory is that it is a form of energy, and that flame seems to be some radio-active emanation. Per-

haps it so impregnates the tissues of those who bathe in it that their natural degeneration is halted, and if this is so, eternal life would naturally follow. Scientifically, such a theory is not an impossibility."

"God, Carl! Then it's the fountain of youth, the fabled fountain that was the goal of so many searchers in the early days." And then to Gerda: "Hagen—he has been here—how long?"

"So long memory can count not the time. He descended, the sagas say, through a well whence now plunges the stream that feeds the sea."

"But that must have been centuries ago."

"Centuries? I know not the word. But if it mean a time that is long, then it cannot be too long to measure the space Hagen has ruled Horder. The memory of the little folk is dim as to what was before that, save that they were driven from Horder by the Yotuns, and that it was Hagen who led them back to the pleasant land and drove the foul ones to exile in the outer cavern. The sagas say how the Great One taught them the ways of the Northland, that is but a name to any save Hagen himself; how he taught them to forge *brynnies*, and swords, and dragon ships, to erect houses, to till the land."

A faint howling came from outside, and Gerda darted back to the window. "Oh, the Horder folk are clustering about Hagen. They are gathering for a final attack. And they are so few, so pitifully few." She stared out, her hands tightening on the sill.

Eric rattled phrases to me: "Carl, it checks. Hagen said things that puzzled me out there, things that showed he still thinks in terms of the world as it was known to the

vikings a thousand years ago. You remember he spoke of fighting the Gaedhill—the Irish—at Dyfflin, which was the Norse name for Dublin. He wanted to know if I came from Egder or Raumer, districts of old Norway that lost those names long ago.

"America was a strange word to him, but Vinland and Markland were familiar—the appellations of Norse settlements on this coast whose traces have vanished for centuries. I thought it all was a matter of tradition, though he talked as if they were personal experiences. Now I realize they were."

"But that would mean he is a thousand years old."

"Exactly! Miraculous, but all the evidence points to its being true. And the Horder folk, the dwarfs, must be older still. Carl, in every northern land there are legends of the little folk, dwellers underground, trolls, elves, gnomes, leprechauns; they have many names, but their qualities, their appearance, is always the same. Perhaps these are the last remnant of the little folk, this Horder cavern their last retreat."

"And the savages?"

"They, too, are eternal. They were in possession of this land when Hagen came down the shaft; undoubtedly they, too, bathed in the glowing pool. I remember now that the being I chased up above also seemed to glow in the dark."

"Then they do visit the upper world."

"Yes! That, too, checks. They know the way out. We'll find it and get back, taking Gerda with us."

I stirred uneasily. "Eric, you're in love with her." I could speak bluntly to this friend of years.

"I am, Carl," he admitted. "When we return to the normal world, I

hope to persuade her to become my wife."

"But look, Eric; she, too, must be—ancient. Apparently twenty, but really—who knows—a thousand years old, perhaps."

His hand dropped from my arm where it had been, and he took a slow step backward. "My God!" he groaned. "No!"

"Yes, Eric. She must have come here before the shaft was closed, since she knows of no other passage. And that was—at least three hundred years ago to our definite knowledge."

Even in the vague light I could see the stricken look on his countenance. "But—but she is so young, so beautiful."

"Held that way eternally by the flame. And if you should marry her, she will remain twenty while you grow wrinkled and old; twenty when you are bent and toothless and cackling with senility. Forget your love for her, old man. It's unthinkable!"

"But, Carl——"

"They're winning." There was a hysterical edge to the triumph in Gerda's cry. "Oh, come here quickly! Look! They are defeating the Yotuns, are driving them from the flame."

WE SWUNG to the lookout. It was true. The dwarfs had forced a way between the savages and the flame. In a thin line, shields overlapping to form an iron wall, they were pressing steadily forward against a chaotic but still desperately fighting mass of Yotuns. Hagen was battling just ahead of the pygmies, bellowing in a berserk rage, his sword making a blurred ring of steel about him.

The Beathics broke and were a shrieking, gabbling, defeated mob

across the darkened land. Fast as they might, the Horder warriors pursued them, shrilling victory, but the longer-legged savages outdistanced them easily.

Hagen alone could reach them, his helmet gone, his shield discarded, his long curls streaming back of his great head, he harried the aborigines, thrusting, hacking at their fleeing backs, strewing them in a long trail of writhing, bloody bodies.

"Wonder why they don't make for the gate!" Eric exclaimed.

"Arnulf's men would cut them off here, and there is a guard on the other side of the tunnel."

"They're not scattering; they seem to have a definite objective. They're making for the sea. But there are no boats there; are they going to throw themselves in to drown?"

"So it appears. Why don't they surrender?"

"No use. Norsemen take no prisoners. You remember Arnulf back there."

"Eric! They didn't come in through the gate. They have some other way. Look! What's that long, dark mass humping out of the water just offshore?"

"Looks like a whale, but that's impossible. Jumping Jupiter! They're diving into the water right alongside it!"

The last remaining savage vanished beneath the surface, and Hagen, straddle-legged on the shore, howled in baffled rage. Then suddenly the dark mass was moving. It slid slowly away from the bank, sinking, was gone under the heaving waters.

"Like a submarine," I grunted. Then a thought struck me, and I addressed the girl in my halting version of the old Norse:

"Lady Gerda, how deep are those waters?"

"Twice the height of Hagen at their deepest."

"And it is fed by the river in the outer cavern?"

"That is so."

"Eric! That's how they got in! That's a diving bell, dry inside. They dived under the barrier wall with the stream's current, built the thing just inside, unobserved, and used it for their raids, first to capture Gerda and lure the bulk of the army outside, then to make their attack on those left behind and on the flame."

"He comes!" Gerda was leaning far out of the casement. "He comes! Hagen comes! Oh, he is bleeding, wounded! I must tend his hurts." She came in, vanished down the ladder.

We found Gerda binding Hagen's wounds with strips torn from the hem of her robe. He glowered when he saw us, but continued talking to her. "—found that the foul ones were filling the pool of the flame with earth and stones, quenching it. 'Twill be but short work to restore its full power. But they have slain ten *hereder* of men, and all the dragon ships are sunk. The ships can be replaced, but the men—" He made a weary gesture of his hand.

"You have saved Horder; console yourself with that." She patted the last bandage in place.

"They fought bravely and well, my little warriors." His face softened. "Truly they have not forgotten what I taught them so long ago, when first we drove the Yotuns from this pleasant land.

"Arnulf!" he called.

"Here, Great One!"

"There will be a *thing* at the *skaale*, and a feast to follow. Bid all be prepared. Send the word forth."

"It shall be done, Jarl Hagen. What of the prisoners?"

"The Yotun spies? Yourself have demanded a *holmgang* for them. Well, we shall hold it at the *thing*. 'Twill not take long, and will whet our palates for the feast. Meantime, keep them here."

He went off, Gerda with him.

Arnulf motioned us back within the tower. "You will have a chance to prove what you can do against the Great One himself. The Yotuns are easy prey; even we Horder folk can spill their brains."

## V.

FOR AN HOUR we had watched through the slitlike aperture as the light grew brighter, till now it was again as bright without as day would have been above. Evidently the flame had not been irreparably damaged. Eric squatted in a corner, brooding, and I kept silent, sensing his emotional turmoil. I had said my say, another word from me and he might, through sheer obduracy, make the decision I dreaded.

And it was doubtful whether there would be any decision for him to make. The *holmgang* was ahead of us, the deadly sword combat by which he was to prove our innocence, battle for our release. Either he or Hagen must die; that was the heroic rule of the ordeal. Hadding had been on the fencing team at the U, but would he be able to hold his own against Hagen, skilled in the arts of war, taller, more powerful? True, Hagen must be fatigued, weakened by his wounds. But these had been merely superficial, and doubtless the bath of the flame had endowed him with a supernatural recuperative power.

The door jarred open, and Arnulf's thin voice said: "All is pre-



pared. Come!" We rose and moved out into the open. The Lilliputian company closed about us in their hollow square, and once more we were marching across those paradoxically green fields in the earth's bowels.

We climbed the hill, arrived at the largest building on its summit. This was a great edifice solidly constructed of huge timbers. The long side wall was windowless, but near one end there was a tall door, over which a well-carved simulacrum of a dragon's head watched us with beady eyes of some black, semiprecious stone.

Rolf stood before the door in full panoply. As we neared, he blew his horn, and the great door swung open. He wheeled and strutted through. We followed.

"Wait here," he said, and disappeared through a leather-curtained doorway.

We were in a small chamber. "This is the *forstua*," Eric said. "The entrance vestibule to the *skaale*."

"And what on earth is a *skaale*?" We were both trying to keep our thoughts from the ordeal ahead, the test of whether we were to live or die.

"The town hall of a viking village, where the local assembly, the *thing* met, and where their great feasts were held. I've lectured on them many times, but I never thought I should stand in one. Next to this room is another small one, the *kleve*, a sort of armory, and they both open into the great meeting hall."

"What——" But Rolf was through the curtain again, staggering under the weight of a sword longer than he was tall. "The Great One sends you a blade to match his own. But mail he has not to fit you, so he has doffed his own."

Eric took the weapon from him, made it whistle through the air. "'Tis of true balance," he said calmly. "I am ready."

"Your thrall will be permitted to watch the combat. Arnulf, conduct him within."

"Good luck, old man!" I gripped Eric's hand, then turned to follow Arnulf. Though I was heavy-hearted with apprehension, a certain pride of race made me assume a nonchalant, carefree swagger. I wasn't going to let these little fellows know how scared I was.

I entered one end of a great, oblong hall, lighted by fires along the center of the floor, their smoke escaping through a blackened hole in the high roof. The dark walls were hung with shields, weapons, smudged tapestries, and all around them were long, low benches, broken at the middle of each side, and the rear, by raised platforms on which were high chairs. The benches were crowded with tiny warriors, each plainly showing the marks of the battle with the Beathics.

The high seat at my right, flanked by pillars supporting a canopy of green satin, was occupied by Jarl Hagen, resplendent in a scarlet costume of richly embroidered silk. Opposite was Gerda, her white robe seeming to glow in the flickering firelight. The chair at the opposite end of the hall was vacant, and to this Arnulf conducted me.

I had barely seated myself when Rolf appeared. His omnipresent horn hawked, and then Eric was coming in, poised, confident, smiling a little. At the same time Hagen descended from his dais, drawing his weapon from its jeweled scabbard.

"Hear! *Thing* of the Horder folk!" Rolf's proclamation was a thread of sound in the expectant

hush. "Eric Hadding, outlander, being accused as a Yotun spy by Hagen the Great One. Arnulf of the Outer Cavern has demanded trial by *holmgang* on his behalf. Jarl Hagen, do you persist in your accusation?"

The deep bellow of the viking was oddly loud by contrast: "I do, and I am ready to prove my charge by my body and my sword."

"Eric Hadding, do you, on behalf of yourself and your thrall, deny that you are Yotuns and spies?"

"I do, and I am ready to prove my innocence by my body and my sword."

"Let the *holmgang* proceed to the death of accuser or accused. To the death of accused's thrall if the accuser be victorious."

ROLF STEPPED back. In a silence that was absolute, the two tall, blond men approached each other with long, lithe strides. They came within reach, and Hagen's sword lashed out, snakelike in its swift strike. I caught my breath, but Eric was ready; the stroke slid along his blade, the two hilts clashed. The duelists stood there for a moment, straining, statuelike. Then the swords disengaged, and they were in a whirl of action.

So swiftly did they feint, and parry, and strike, and parry once more, that it was difficult to follow the combat, impossible to describe it. The hall filled with a ringing clangor of metallic sound—the whirling swords were a blur of flashing steel. Hagen leaped in and out, Eric swayed and countered. Gerda leaned forward in her high seat, white faced, her lower lip caught under pearly teeth. Steel rasped and rang—the combatants' stertorous breathing rose loud in a sullen lull in the tumult—for a moment the weapons were engaged again in a straining

deadlock—Hagen's wrist twisted, his blade flashed away, flashed again—slid past Eric's steel and caught in Hadding's shirt, ripping it from his torso, but never touching the bared flesh.

Eric jumped back. Sweat glistened on his skin, darkly tanned save where the odd-shaped birthmark showed red and distinct. Hagen swayed on tiptoe—sprang in again—catlike for all his bulk. The gleaming line of his sword slithered past Eric's hasty guard—the point was at his throat! And stopped there, just pressing the skin, while Hagen, suddenly immobile, stared at his opponent's chest.

So startled was Eric that he, too, froze, and Hagen ripped out chokingly: "Halt! Halt the *holmgang*!"

Eric blinked, coming out of the shadow of death. Then he smiled tauntingly. "What woman's whim stays the sword of Horder's champion?"

The other's face was livid. He pointed a trembling finger at Hadding's chest, at his birthmark. "That—that closed hand—is it painted there to mock me?"

Wonderingly, Eric responded. "Painted? No. It has stained my skin from birth. My father had it!"

"Your father!" Hagen gasped. He tore at the silk covering his own breast, ripped it away. "Look!"

On his bared skin, darkly purple, was a closed fist. A murmur ran through the hall, a curious shrilling of surprise.

Hagen looked down at it, looked again at Eric's. They were identical, save for the color. "This mark was branded on me by the Slavs when I was their prisoner. I returned to find my wife with child, she saw this, and when my son came from her womb he had the same stain on his infant skin. Soon after

I sailed away to that last battle in the upper world I ever fought. Who are you? In Odin's name, who are you?"

"Not your son, Hagen. My father lives, and I know you are not he. Nor his father, who had the same stain, for I saw him buried. And *his* father's grave I have seen. But that one came from the Northland. Jarl Hagen, how long have you been here?"

The viking's face twisted as if in agony. "How long? So long that I have lost track of time. So long that my bones should have been dirt, and grown into a tall tree, and rotted earth again were it not for the eternal life gained from the living flame. So long that I am weary of life and curse the day I bathed in the pool."

"A thousand years, Hagen?"

"Years?" He stood there, trembling, fumbling for thought. "Once that word had meaning for me. Aye. Perhaps a thousand years—I do not know. It may be."

"And do you think in all that time the face of the upper world has not changed? Do you think the son you left behind has not died, and his son, and his son's son, for generation upon generation?"

"Aye!" Hagen whispered. "I had not thought. It must be so." Then his voice rang out: "But that mark, that mark!"

"This mark is the sign of your blood, indelibly stamped on the fruit of your loins to the thirteenth generation."

## VI.

IT TOOK time for that to sink in, while Hagen stood there gray-faced, and the thronged hall was so quiet that the gnawing of a mouse beneath a bench grated loudly through the silence. My own brain

reeled as I tried to realize that here in front of me, both living, stood two men whose births were a thousand years apart, yet in whose veins flowed the same blood.

And suddenly, gazing at them, I knew why Hagen's lineaments were familiar to me. Barring the beard and mustache, they were Eric's, Eric's in every feature. Somehow that made the thing real to me.

A long shudder went through the Norseman's body. Hagen's mouth worked, and then his booming tones rang through the hall. "Men of the Horder *thing*, I withdraw my charge against Eric Hadding and his thrall. None of my blood could be a Yotun spy!"

A great cheer went up. I started from my seat to where the two blond giants were clasping hands in a greeting across the ages, but Gerda reached them first.

"I'm so glad, so glad!" she cried, and her arms were around them, ancestor and descendant. She kissed Hagen, tears streaming from her eyes. "So glad for you, dear brother!" She twisted to Eric, kissed him. "And for you, dear savior!"

Hadding pulled his hand from Hagen's grip, and Gerda was folded in his embrace. She quivered closer. I heard his hoarse tones: "And I am so glad that I have found you, Gerda! Say you will never leave me again."

"Never, dear heart!" They were oblivious of their surroundings, of the cheering mob of mailed pygmies, of the thousand-year-old Jarl Hagen. I was suddenly cold.

"Good God, Eric! You can't do that," I choked. "You can't! She's ancient. Your ancestor! You can't!"

He looked up at me with bleak eyes, but he still held her tightly clasped. "What can I do, Carl? It's

—it's beyond my strength to give her up."

In my distress I turned to the smiling Norseman. "Jarl Hagen, you must not permit this!"

He started. "Why should I forbid it?"

"How can these two mate—with such a gulf of years between them? It's unthinkable, horrible!"

Surprisingly, he threw his head back and roared with laughter. I gazed at him astounded. At last his mirth subsided. "But that is not true. Their years march together."

"She is your sister, ancient as you!"

He shook his head, amusement still crinkling at the corners of his eyes. "Nay! She is my sister only by right of affection. And she has not the gift of eternal life, has never bathed in the flame."

"I do not understand."

"The Lady Gerda was a babe, a yearling, when first I saw her. Arnulf brought her to me. He had seen her in the hands of a Yotun savage, brought from the upper world with sundry other small animals by the passage they know, but whose secret we have never learned. He took her from them, and ever since she has lived here with us, the only female in all Horder land, beloved by all and loving all, but never one of us. As an infant, we would

not bathe her in the flame to stay her as a puling babe, and afterward she would not."

"I knew it, Carl, I knew it." Eric's voice pealed out exultant. "She's coming back with us, coming back to the sun and the blue sky. I'll make up to her for all the lost years she has spent in this cavern."

"Coming back?" All my joy at this sudden turn of events drained away. "How? The only ones who know are the Yotuns, and we'll never get it out of them."

"We don't have to." His eyes danced. "I've figured it out."

"What!"

"Listen, Carl! The Horder folk are undoubtedly familiar with every inch of this inner cave, and they patrol the outer one, so that if the passage were there they would have found it. There's only one place left where it could be."

"Where's that?"

"Somewhere between. You remember we decided that they came into Horder through the entrance channel of the river. The dwarfs have never been under there, and it's plenty long enough to have an outlet to the upper air, judging by the length of the tunnel at the gate. I'll stake my life it's in there. And if they can get at it, we can, the same way—with a diving bell."

"Let's go!"

Next Month Read:

## Manna From Mars

by

Stanton A. Coblentz

In the March ASTOUNDING STORIES

# Blind Reasoning

by Roi Auckland



*He spoke as if strange voices were calling him.*

**T**HE S. S. *MARAMIC*, Boston to Liverpool, was somewhere in mid-Atlantic. Her riding lights and that on the bridge gave hint in the night of the size of her vast hull; smoke vapors from her two funnels whorled against the

murky sky; and behind her into the mystery of the night stretched the line of her bubbling wake, reeled out at a twenty-knot gait. Amidships, on C deck, there was a pin point of light, but otherwise her cabins were shrouded in darkness.

A seaman on the bridge clanged the bell four times. Two a. m.

The *Maramic's* sergeant at arms—in a night club he would be called the "bouncer"—had not been able to get to sleep. It bothered him, and after much tossing around he arose, dressed, and sought the sharp wind-swept length of the promenade deck. A well-fed cockney of great poundage and impressive demeanor, he had noted through his career that when he could not sleep, in his own words, "Somethin' that shouldn't be 'appenin' is 'appenin'." Not, therefore, because he thought that a stroll on deck would make him sleepy, but because he had to ferret out whatever was wrong, he paced stolidly and yet suspiciously around the ship.

Mid-Atlantic. A smooth sea, yet ominous under the cloudy sky. A wailing, whining wind rushing over the great waters and fingering the ship. Strange thoughts passed through the sergeant at arms' blocky head: *Wonder what's underneath us 'ere—sunk ships and skeletons and seaweed and funny fishes—and big mountains, maybe, buried by the sea—*

That was a rum idea, he told himself. If he started thinking like that, he'd have to ask that doctor or professor or whatever he was who was on board to take a look at him. Professor—doctor—Doctor Enslade; that was it. A funny fellow, but not so funny as the young man who—

The sergeant at arms rounded the ship, started up the port side, and the thing occurred.

He stood stock-still, staring, his mouth slowly opening.

A man's figure came out of one of the entranceways halfway up the deck. It was disheveled in appearance, wearing a ruffled silk dressing gown over the white shirt, black tie, trousers, and waistcoat of evening

dress. The bloodshot eyes in the pale young face gazed wildly up and down the deck, turned and fixed on the darkness between sky and lonely sea beyond.

Then the figure had run to the railing and was climbing up onto it dizzily.

"Huh—hey!" the sergeant at arms shouted.

The young man's head turned. The sergeant at arms received a profound shock. That pale face had changed. No longer was hysteria visible on it. It was smooth, calm. The eyes were aglow, and the full lips were smiling.

The sergeant at arms jerked into a desperate run.

He didn't have a chance. Long before he came anywhere near it, that section of the deck railing was empty. Smiling, the young man had thrown himself overboard, into the darkness and the sea.

"Merciful God!" said the sergeant at arms in a choked and horrified voice.

The spell of the thing held him paralyzed for a minute, two minutes. Then he was at the railing, staring down foolishly into the surge and moan of the sea. Then he came somewhat to himself, saw a life buoy hanging near by, seized it and threw it out. And then he ran for the bridge.

Minutes later, the *Maramic* had slowed her headlong rush and was turning in a careful circle while from her top deck the long, white fingers of searchlights probed back and forth over the slick water, and a lifeboat hung out ready to drop. And on the bridge the sergeant at arms was repeating to the awakened captain:

"'E comes out—looks around sort of wild and desperate—then climbs on the rail. I shouts at 'im, and 'e



looks at me. And 'e was smiling! I swear it—*smiling!* I tries to reach 'im, but——”

“Did you recognize him?”

“Sure, sure I recognized him! He was that young——”

The mate came up, broke in: “No sign of him, sir. How long shall we look?”

“He committed suicide; that’s plain enough,” the captain said. “He wouldn’t be swimming around after throwing himself in. And I don’t want the passengers aroused and running back and forth. Another ten minutes, mister, then get back to our course. Now, sergeant——”

“He was that young man Charles Hart,” said the sergeant at arms.

The ship’s doctor, wiping sleep from his eyes, had come out on the bridge. He heard the last words. He said: “Charles Hart! So he’s the one! I had a premonition——”

“You what?” the captain asked sharply.

“I had a feeling,” the doctor said slowly, “that something like this might happen.”

“Why?”

“Don’t you remember, sir? Charles Hart was traveling with Doctor Raoul Enslade. The famous psychoanalyst and scientist and God knows what all. The one for whom we made all those special concessions, so that he could carry out some strange kind of an experiment on this young man Hart.”

“Yes,” the captain said thoughtfully. “I remember. What state-room did they have?”

“No. 42, sir, on C deck.”

“We’ll go there,” the captain said.

THE DOOR of cabin No. 42 was open. Bright light streamed from within. The three men, captain, doctor, and sergeant at arms, heard a low, droning sound, spaced by a

regular ticking, as they approached. Almost hesitantly the captain looked in.

“Good God!” he said; and stepped rapidly inside.

They saw that the cabin was a shambles. The drapes over the door had been torn down. One of the three chairs was in splinters, and the mirror of the medicine chest above the washbowl had been smashed. But the thing that held their eyes was the man who lay sprawled beside the wrecked machine.

“Enslade!” the ship’s doctor said, and bent over him.

A big, powerful man, Doctor Raoul Enslade. A brown, rugged face, framed by hair of iron-gray. A full six feet in height, well-proportioned, with exercise-tapered muscles.

Yet he had been hurled down, knocked unconscious.

Fragments of the machine were around him. The sergeant at arms regarded the thing suspiciously, fearfully, while captain and doctor stooped close to its outstretched maker. The droning, ticking sound came from what was left of it.

Tripod-shaped, it was constructed around much intricate machinery, stuff of wires and shiny metallic bits and long, slim tubes. Other wires led from it to a queer kind of metal cap, large enough to fit over the skull of a man. It received power from an electric outlet in the wall of the cabin. The sergeant at arms almost automatically disengaged this connection, and the droning sound ceased with a hoarse rasp of out-of-line metal.

The ship’s doctor forced whisky through Raoul Enslade’s bruised lips. Then, after a moment, the big man sighed. The eyelids quivered and slowly opened. Clear blue eyes looked up.

"Doctor Enslade!" the captain said. "Are you badly hurt? Do you understand me?"

"Yes—yes." A quiet, steady voice, even though the man was barely conscious. "Not badly hurt——"

"What happened here? What does all this mean?"

The blue eyes widened. The body shuddered a trifle, straightened.

"Where—is he?"

"Charles Hart, you mean?"

"Yes. Where is he?"

"Gone," the ship's doctor said quietly. "Gone overboard—a suicide."

"Ah, yes! I should have known. Of course—gone overboard."

"In God's name!" the captain said angrily. "Explain this to us! What does it mean? This machine, Charles Hart, a suicide—why?"

"A suicide?" Raoul Enslade murmured. "No—no. Did one of you see him go? You—yes? Wasn't he—smiling?"

"Holy saints!" said the sergeant at arms. "He was!"

The captain's face was purple.

"I insist on a full explanation! This is no light matter! A man is dead! Realize that, sir! Now—what do you mean by these things you say? You were traveling with the poor young man; this machine is yours and is, I take it, at the bottom of the experiment I've heard you were to work on him. Understand your position. Charles Hart—a wealthy young man—not a suicide, though he throws himself overboard—smiling—and you *know* he was smiling, though you did not see him go! By God, sir, I—I—what does it——"

Raoul Enslade might not have heard him. The blue eyes were somewhere else, and he was saying very softly:

"Yes, Charles—some one there

calling, perhaps, all through the years—— The lemmings—the lemmings——"

## II.

WHEN THE S. S. *Maramic* left Boston, Doctor Raoul Enslade went to the chief electrician and said to him:

"I'm Doctor Enslade, of whom Mr. Campbell of your company's New York office has told you. If more is needed, here is a further authorization signed by him."

"Yes, sir," the chief electrician said, glancing at the paper held out to him. "I've spoken to Captain Travers, and everything that you desire will be done. I understand that you want a certain amount of electricity laid on to your cabin, No. 42 on C deck?"

"That's right. Here are my calculations. The machine does not require very much."

The chief electrician looked at the sheet of figures.

"We can provide that easily, sir," he said. "I'll have it laid on through No. 42's electric outlet 'B,' in the forward wall of the cabin."

"Thank you."

By way of the promenade deck, Doctor Enslade made his way to his stateroom. He was but barely conscious as he walked of a few whispered comments from the numerous passengers on the deck; the years had steeled his hatred of notoriety to a stolid acceptance of its penalties. It simply had to be expected. His face, his figure, were not to be forgotten, even though seen only once in a photograph; often, too, newspapers had carried sensational paragraphs about certain of his more striking developments and announcements. This means of spreading knowledge he deplored, but could not alter or avoid; so long as he was

granted absolute privacy until the completion of an experiment, he could not, he considered, complain.

But in recent years even that privacy had been hard to gain. Almost he had expected to be met by reporters at the *Maramic's* gangplank. Apparently, however, no word of the true significance of his and Charles Hart's presence aboard the liner had leaked out. For this he gave deep thanks; he was profoundly aware of the danger and delicacy and utter mystery as to the results of this most unusual undertaking.

He came to his stateroom, went inside. "Well, Charles," he said, smiling, "we're on our way."

Charles Hart looked up from where he had been glancing unseeingly through the pages of a magazine. "I'm—uneasy, Raoul," he said.

The truth of this was visible at sight of the young man. No more than twenty-five, he was of slight build, fair-haired, gray-eyed—handsome, though, most people considered, in a weak way. But Raoul Enslade knew what lay behind this impression; it was not weakness of character that gave to Hart an indefinite, dreamy feeling. No; it was rather the mystery of the young man's whole life, a mystery that had fascinated and challenged him, the scientist, ever since he had first come into contact with it.

He sat down now beside the other, leaned toward him; sober, calm, friendly, an ideal example of the true man of knowledge.

"You can't help being uneasy, Charles," he said. "If you were not, this trip would be pointless for us. I'm glad to hear you say it; it means that we have a fair chance of solving the thing once and for all. It's been growing on you—the feeling?"

Hart puffed nervously on a cigarette. "Yes. Yes. Growing. One

of those damned spells coming on. I know it. A couple of weeks ago, you know, it started—the first time in two years. Oh, God! And I thought I'd gotten rid of it!"

"You will be rid of it forever, Charles, when the ship docks at Liverpool. Believe that. How did the feeling grow this time?"

"As usual—nothing out of the ordinary, until an hour or so ago, when I came on board and the ship began to move toward the sea. Just short spells—moments when I seemed to know nothing, feel nothing, see nothing. Then a very faint feeling of something *waiting*; something that I ought to do. You know; I've told you of that. Then, when I came on the ship and smelled the sea—then the thing suddenly became very definite. I don't need the spells now to feel it; I feel it all the time."

"You can't explain it—understand it—know what it is at all?"

"No, no! I'm dumb, as regards that. But it's there. Something—something I have to do——"

He was breathing quickly. Raoul Enslade nodded.

"All right. Don't concentrate on it any more now. Lie back; try to relax. Enough for now that we know the thing is progressing, and that coming on the ship and moving out to sea has advanced it much more rapidly than usual, so giving support to my theory."

He was silent. Then he arose and went over to the packing case that stood in one corner of the cabin.

"The machine's in this, Charles," he said. "I'll take it out and assemble it now. We'll give it its first trial to-night."

"Yes—yes," the young man murmured. "I'm tired, Raoul. Sleepy."

"Good! Sleep if you can. I won't make any noise."

Within half an hour, he had the

machine assembled. A tripod, with wires, machinery, and tubes inside the three legs on a triangular platform. Other wires led to a gleaming skullcap of metal. There was another wire for connection with the electric outlet in the wall.

"Yes," Raoul Enslade said, looking at the machine and then at the sleeping man. "But—dangerous."

THE MACHINE stood in the center of the cabin. The power wire was connected. The door was closed.

Outside was deep night and a smooth sea and gentle wind. The hiss and bubble of water running swift along the sides of the ship was the only sound. The passengers, tired after the day of leave-taking, were asleep.

"Sit down there, Charles," Raoul Enslade said.

The young man's face was pale. In his eyes was a strange look; uncertain, shifty, changing at times into almost complete blankness. His hands were trembling a little.

"It's very strong, Raoul," he whispered. "Very strong. Getting me more and more—"

"I know, Charles. And now listen, so that you will have faith in me:

"Ever since boyhood, you have had these spells. You remember very little of them; your father and mother have told me definitely how you looked while under them. Pale, trembling, eyes strange and filled with some far vision—much as you look now. At first, the spells meant nothing more than that; only an hour or two of what we might call a trancelike state. But when you were twelve, one came that held you a full day. And at fifteen, while under one, you escaped from your room and the nurse who was watching you and started to run away. Where,

you did not know—afterward. But you ran desperately, hurriedly. You fainted after you had covered about half a mile, and when you came to, remembered hardly anything of what had happened."

The steady voice paused for a minute. It continued:

"At twenty, a more serious lapse occurred. Your family was spending the summer at a shore resort. The spell came on. You broke away again, ran down to the beach—and fainted there, the water lapping around you. That was when your people consulted me and I became interested in you.

"Since then, you have had two spells. Nothing drastic, for I was with you both times, and you could not escape, though you wanted to. As always, you did not know why, afterward, or where it was you wanted to go.

"And now—another spell is coming on you. And you are at sea. Deliberately I have brought you here. It was the sea toward which you ran once. I have reasoned that somehow the sea is connected with whatever phobia is at the bottom of your condition.

"And this machine, Charles. It represents my attempt to clear away forever the phobia. Simply, this is what I think it will do:

"Think of your mind as being in two parts. The top part is the conscious one. The other, the deeply buried, the subconscious. When you think and tell what you think, you speak out of the conscious mind. Perhaps you want—when in a spell—to speak out of the subconscious mind, but you cannot. But if you could"—he uttered these words slowly, impressively—"you would be able to say clearly what this mystery is, this spell; you would be able to say in so many words what forms

it, what there is in it. And once you had done that—expressed it, ridded yourself of it—it would be gone forever. For that has been, consistently, the experience of psychoanalysts.

"So this machine, Charles, I have constructed with the idea of eliminating the conscious part of your mind and leaving the subconscious, so that the thoughts from it will come out clearly and directly in speech. Whether it will work, I do not know; but I think it will. And the spell is coming on you, and you are on the sea, and—"

"But put on the helmet."

TWO NIGHTS later, Raoul Enslade sat down in his cabin with his notebook open before him.

It was midnight. The sky was cloudy; the night utterly black. A hush seemed to hold the world of water through which the great ship moved.

On one of the two beds in the stateroom, Charles Hart lay asleep. Under a silk dressing gown, he wore the conventional black and white of evening clothes. His face was pale and drawn and troubled, even in sleep. His breath came unevenly. He looked like a man at the point of complete exhaustion.

Raoul Enslade looked at his own neat writing in the notebook and began to read.

It was in the form of day-by-day entries:

*Wednesday, Nov. 15:* At one in the morning, I tried the machine on Charles Hart for the first time. His trauma, to judge by purely physical signs, had reached a point where I considered it well to begin the experiment.

The results were almost what I had expected, and so may be considered satisfactory, though by no means complete.

After three minutes under the wave-impulses of the machine, he began to speak. His eyes were closed, his body trembling slightly, the beat of his heart fast. Over a period of half an hour, these were his words, at intervals encouraged by a question from me:

"Yes. I know the time is here. I know you are all gathered. I will come. I will come." Interval of three minutes. Question by me: "You will come where?" Answer: "I will come to where you are all gathered in the great square." Interval of five minutes. Question by me: "Why are they all gathered in the great square?" No answer for two minutes; subject moaning. Answer: "You are all gathered for the choosing. Yes; I know the time is here! I know I should be there! I—will come—will come—" Interval of four minutes. A series of unintelligible—to me—words: "Gaya—Quartros, the lord—it shall be—it shall be— No, Quartros! No!" Subject here evincing great excitement and mental turmoil. I disconnected the current, and he fell forward in a daze, which passed into a deep sleep.

*Thursday, Nov. 16:* Subject passed most of the day asleep. Confused, weak, and mostly speechless when awake. Asked a few vague questions as to experiment, which I answered with generalities, hopeful in tone. Ate lightly of meals brought to cabin. At one thirty in the morning I again placed him under the machine. The trauma seemed completely upon him; to-day and to-morrow, I am sure, are the climax.

After two minutes under wave-impulses—a minute less than the previous time—he began to speak. Physical phenomena practically the same; mental excitement perhaps slightly higher.

"But I will come! Something is holding me, but I will come despite it! Gaya—you must wait for me; you must not permit Quartros to decide before I am there!"—Note greater clarity and greater ease of speech.—"Would I willingly be absent from this choosing, so important to me and you, Gaya? You must trust me; I will come. Yes; I know

that all the others are gathered in the square and that Quartros is mounting his chair and that it is beginning. I will—I will——"—Interval of three minutes.—Question by me: "Who is Quartros?" Answer—given immediately—"Quartros—you are the lord, Quartros; you are the chooser; the ruler of the choosing. And you must choose me, Quartros, for Gaya."—Interval of two minutes.—Question: "Who is Gaya?" Answer: "Gaya, Princess Gaya, you love me, even as I love you; and you must be for no one else; and surely Quartros will choose me for you—surely he will see and understand our love—I will be there. Gaya! I will!"—Interval of five minutes.—Question—I doubted whether I would receive answer even as I asked it—"Who are you?" Great excitement immediately apparent. Many unintelligible words; subject muttering, groaning. I considered it best to disconnect the current. As before, subject passed into a sound sleep.

Raoul Enslade stared at the notebook for several minutes, deep in thought. He glanced around at the young man sleeping on the bed; looked at his watch. It was twenty-five minutes past one a. m. He grasped a pen, wrote in the book:

*Friday, Nov. 17:* Subject passed almost the entire day asleep. Obviously very tired and weak. No questions from him in few waking moments; no speech at all. Took little nourishment. I am convinced that, when I apply the wave-impulses to him in a few minutes for the third time, we shall reach the climax of the experiment. The trauma has come to its deepest point, and has been advanced, I am convinced, by the changing position of the ship. I think I have the explanation of this—indeed, of the whole case—and an incredible thing it is; but I know that it will be proved or disproved by what takes place when I turn on the current this time.

It is now half past one o'clock in the morning. I am going to begin the third experiment immediately.

The tall scientist arose, closing the notebook. He made several minor adjustments on the machine, standing as before in the center of the cabin. Then he went to the bed.

"Charles!" Grasping the other by the shoulder, he repeated: "Charles! Charles!"

The sleep was too heavy. Raoul Enslade picked him up bodily, carried him to a chair close to the machine and placed him in it. Then he fitted the metal skullcap onto the young man's head. Pausing only to put a pad of paper and a pencil near by, he turned on a switch.

A low drone, spaced by a regular ticking noise, became audible in the cabin. The tubes of the machine glowed. The vibrant feeling of unleashed electricity filled the air.

On his bunk far below in the ship, the *Maramic's* sergeant at arms tossed uneasily; rose, finally, and began to dress.

CHARLES HART'S body stiffened. Suddenly he sat upright in the chair. And then, though his eyelids remained closed, he was speaking—urgently, with great emotion.

"Gaya! They are still holding me, Gaya. No, Quartros; do not count me absent yet. I will come—yes, despite all they can do to hold me! It is not fair, Quartros, to choose before I am there. For it was you who sent me on this voyage to the far, strange lands to find if I could a new land for our people to live in. You cannot trick me, Quartros. The gods will avenge me if you do. You must not choose some one else as mate for the Princess Gaya. You must wait until I return—you must!"

The words fell away into silence. A minute or so passed. Raoul Enslade said slowly, resonantly:

"Who are you?"



The man who was Charles Hart, yet seemed to be, strangely, some one else, said quickly:

"I—I, the Prince Gartrell—I tell you this, Quartros! If you trick me, and choose elsewhere for Gaya, I shall be avenged! Blame me for being absent? You cannot! You know I know the law. Once every term you choose mates for those of blood royal, and this term marked the time when mates were to be chosen for Gaya and for me. And you know of our love. You asked me to lead this voyage of exploration, and I—because our land is in danger, so the wise men say—I did as you desired. But you promised that the choosing would await my return. And now the barbarians have captured me, and you—you are not waiting. But you must! For if you do not, if you give Gaya to another—to that whining son of yours, perhaps—I will be avenged! But—but——"

The speaker was gasping, straining in the chair, hands clenching and unclenching, caught in the grip of stark emotion; hate, love, desperation, all mingled. And Raoul Enslade, watching him, felt fear, and leaned forward to disconnect the current.

But the hot, tumbling words of the young man in the chair stopped him, and despite himself he paused and listened.

"*But I will come!* I see it all now, Quartros, evil trickster that you are! But you did not know, did you—you did not think that what the wise men said was indeed true—you did not believe that our land is doomed. But it is true. I see the waters rising—rising—coming over the land, and you, proud Quartros, and your minions, and your weakling son—all of you shall go down in death! And Gaya—Gaya? Princess Gaya—I

come to you—I come to you—I come to take you with me, even though the waters pour down and all the gods unite in damning and destroying our land! *I come——*"

"Good God!" Raoul Enslade cried.

He turned off the switch; but the man in the chair kept rising. He was on his feet now, and his eyes, Enslade saw, were open. Wild, crazed eyes, like those of a caged beast; bloodshot, desperate, in the pale, tense-muscled face. And great harrowing sobs came from the frothy lips.

"Charles! Charles! Quiet! Hear me—Raoul—I'm here before you—don't you see——"

"*I come!*"

Charles Hart tore the skullcap from his head. He hurled it from him; the machine toppled over and went down in a smashing of metal and glass, and somehow the switch jerked over as the thing crashed, and the drone and ticking began again.

But Raoul Enslade did not hear it. All of his energy was needed then. He threw himself on Charles Hart, and knew in the split second when his body struck the other's that his strength was not enough. For the man he grappled with now, despite the slim body, was possessed of superhuman power; and though Enslade used every ounce of weight and brawn and muscle he had, he felt himself forced back, back—and then catapulted against the wall.

He staggered, weaved on his feet, thrust ahead groggily. Then it was as if a sledge hammer came out of nothingness and caught him fair on the jaw, and he went back and down and out, seeing, in that last thunderous moment of darkness slit by blazing light, the figure of Charles Hart jerking the cabin door open and running through and down the dim corridor and away.

## III.

"THAT IS the story," Doctor Raoul Enslade said.

The three men stared at him. The captain found his voice first.

"But—what's it all mean? This Quartros, and Gaya, and the time of choosing, and—where was he going? The waters rising and everything, and—I don't understand."

The tall scientist sat up on the couch. He looked ahead. His eyes were veiled. Slowly he began to speak:

"Underneath this ship now—what's there? Sunken ships and skeletons and fish, all in the great depths—yes, and more. Great mountains and plateaus and valleys, all buried by the sea—a land that used to be. We know of it through legend and myth, and perhaps we scoff at it; but people used to live there, a strong, proud race. They had a civilization we know nothing of, and their own peculiar manners and customs. Perhaps once a year, or every two years, the highborn ones of that civilization were mated; and perhaps there was a ruling lord, like a king, or a Pharaoh, or a high priest, who decided who should be mated to whom.

"And perhaps this lord, once upon a time, had certain things which he wished to gain. Perhaps he had a son, whom he wished to be mated to the fairest princess of the mightiest family. But there was, let us suppose, a strong young prince, and the princess loved him; and if the lord chose—though his word was law—any but this prince for the princess, there would be trouble for him. So he sent the prince away on a voyage of exploration, for the wise men said that the land was in danger from the sea—and the prince was captured and could not come back for the time of choosing—and his loved one was

to be given, he knew at last, to another.

"And then the waters rose and overwhelmed the land, and the prince perhaps heard of it in the far land where he lay, and, helpless, heartbroken, he—well, what? We do not know.

"Perhaps he took some woman to wife at last, and had children, and those children had children—and so on down the centuries. But—instinct, heredity, *blood*—the blood of this prince was so strongly marked by the great horror and tragedy of his life that it passed on through the years—this helplessness, this desperation, this terrible urge to come to rescue the Princess Gaya.

"Perhaps not. Perhaps it is even deeper buried in mystery. There are some things—many—of the human mind that we shall never be able to rationalize. We shall never learn the last dark secret.

"But—if you think all this insane—think of what I said before: think of the lemmings, the rats of Norway, who, once in every few years, migrate, make away, thousands of them, over the land of their birth, through the rivers and lakes, until at last they come to the sea. And they swim out and out and out, answering that dumb instinct, that certain knowledge of a land that used to be where once they lived—swim on until they can swim no more, and die.

"That land?" Raoul Enslade said softly. "Where?"

"Why, where the call was strongest for Charles Hart; where he could no longer resist it; where the urge overcame even the power of my machine to switch him suddenly back from the subconscious to the conscious.

"Here. Under this ship's keel. "*Atlantis!*"

# Let's Get Down to **BRASS TACKS**



**AN OPEN FORUM of CONTROVERSIAL OPINION**

## *Pictures Okay Now?*

Dear Editor:

Congratulations on the new splendid issues of **ASTOUNDING STORIES**! I have awaited the revival of this superb magazine for many months, and I assure you that I did not wait in vain, nor was I at all disappointed. The October and November issues were both beyond reproach; they were fine!

In the December issue *Ancestral Voices* was excellent! I have not read a finer tale in many a moon. Mr. Schachner is one of your finest authors.

*Farewell To Earth* by Donald Wandrei was also very good. While *The Invading Blood-Stream*, *The Machine That Knew Too Much*, *The Purple Brain*, *The Demon Of The Flower*, *The Land Of The Lost*, *The Last Sacrifice*, and *The Terror Out Of Time* were splendid stories too.

The bits of information are very interesting, and "Brass Tacks" lacks nothing. The illustrations are good enough, but why not have one or two by the incomparable Paul? Surely, there is none to match laurels with the master of the art.

If **ASTOUNDING STORIES** keeps up to the fine standards of the famous old **ASTOUNDING**, I am sure that the readers will be well satisfied. You have nothing so far to be ashamed of; always hold your own!—Fred John Walsen, 5609 East Seventh Avenue, Denver, Colorado.

## *And Since December?*

Dear Editor:

It's not such an easy task to take over a magazine that was the most preëminent of its kind and within the short space of three months not only equal the high standard of the original magazine, but actually eclipse it! I believe that the new **ASTOUNDING**, the December number, surpasses any former one.

The stories, with one or two exceptions (and they always creep in!) were interesting and well varied in theme. Nat Schachner's *Ancestral Voices* is a masterpiece of science-fiction. There's plenty to debate over in this story, but I'd rather see what the other readers have to say, and then perhaps I'll put my two cents in.

Another powerful story in this issue is *The Invading Blood-Stream* by Paul Starr. In my opinion this story has one of the most original plots it has ever been my fortune to encounter. But most of its value was taken away when its author contributed a conglomeration of nonsensical and idiotic scientific "facts."

On page 50, Dr. Presnick describes his process for reducing the size and mass of a body. He is correct in stating that the size of a body may be decreased by reducing the size of the electronic orbits. But the explanation of how the men's mass was to be decreased by lowering the velocity of their component parts is so much nonsense. It is quite true that

the mass of a body is a function of its velocity, but the mass is not zero when the velocity is zero! The mass of a body cannot be reduced below its value at a velocity of zero by reducing the velocity still further to a negative value—for there is no such thing as a negative value, physically. Mathematically there is, but inasmuch as the velocity of a body is squared when it is put into the Lorentz-Fitzgerald equations, it doesn't matter whether it is positive or negative as the square of both is positive.

For example, if a 150-poundal body moves away from me with a very high speed it will appear to have a mass of say 160 poundals. If it now comes back toward me with the same speed it will not appear to have a mass of 140 poundals, as one might expect, for its velocity is now negative compared to its original velocity (considering motion away from me as positive), but will have a mass of 160 again. In other words, the minus sign merely denotes the direction of motion, and is not to be considered arithmetically.

Am glad to see the return of Charles Willard Diffin. I'm half sorry Donald Wandrei wrote *Farewell to Earth* as a sequel to *A Race Through Time*. I was perfectly satisfied to have the latter story end as it did. Keep us on a diet of Schachner, Wandrei, Williamson and Gilmore and here's one reader who won't kick!—Julius Schwartz, 255 E. 188 St., N. Y. C.

### "Just the Same—"

Dear Editor:

Your December issue of ASTOUNDING STORIES is the first magazine of its type to come within my scope, and the resulting impression is far from displeasing.

While meandering along I delayed a bit to purchase a newspaper and was attracted by the strange, vividly colored cover. And I read it from cover to cover, and was especially attracted by the story *Ancestral Voices*.

The author gives a splendidly written treatise on the result of Pennypacker's misdeed in the dim, dark past. Also the author, through one of his characters, has a ready, logical explanation for almost all points. But there is one point which disproves the possibility of Pennypacker's act. The slain barbarian's descendants disappeared; they were de-

clared to be non-existent—yet they left an indelible mark! To elucidate further: A non-existent person slays his remote ancestor; two non-existent fighters leave a vast audience gaping with horror; a non-existent dictator preaches new doctrines. This is ridiculous. In fact, the story itself refutes the fact that there IS a past, thus collapsing on its own foundation of time-travel. How? This way: An A. D. 1935 man kills a flesh-and-blood man simultaneously in 1935 and the time of Attila's invasions. According to that, Washington, Lincoln, Columbus, Napoleon, etc., are alive—have never died!

To get back on the track, I maintain, and I think you will agree, that a non-existent person can leave no record or memory of their being unless they are purely imaginary, and furthermore, more than one billion people do not, cannot, conjure the same person in their minds or read his imaginary books.

Suppose Shakespere was a descendant of the slain barbarian!

I will make one concession, though: time-travel may be possible, but only that we may observe, not communicate with, long-dead people.

My congratulations to Mr. Schachner for furthering the truth about racial purity.—M. M. Berman, Chester, Pa.

P. S. Just the same, it was a darn good story.

### From Buck Rogers

Dear Editor:

Very well—since you challenge me, a reader, I take it that it is not unsporting for me to counter-challenge you and Nat Schachner.

But first, let me say *Ancestral Voices* really is an intriguing yarn, and I think that Nat, despite his surname, must have more than a few drops of Irish blood in his veins, for there certainly are a number of Gaelic bovines galloping with irreverent intangibility all through his tale.

However—to the counter-challenge!

What became of the set of books kept by the mythical bookkeeper 1,500 years after his ancestor died before conceiving his line? The bookkeeper may have been mythical, but the books and ink were not. Will Nat please tell us how a nonexistent bookkeeper applies existing ink to existing paper?

What became of the baked beans presumably fed to her mythical children by Mrs. Murphy?

And you and Nat seem to have ducked the issue of what became of the existing clothing worn by the nonexistent people in the period in which they existed, 1,500 years after their progenitors would have been conceived if their conception had not been prevented a millenium and a half after, or before, it did, or did not occur.

Can you and Nat pick up the hat you have thrown in the ring?

Assuming the possibility of traveling backward in time, isn't it obvious that the time-traveler cannot reverse the facts of the period into which he ventures, although he may observe and now record events until now unrecorded?—Phil Nowlan, 126 Cynwyd Road, Bala-Cynwyd, Pa.

### *Well, Mr. Schachner?*

Dear Editor:

Nat Schachner in his *Ancestral Voices* does, as you say, develop an idea which has been slurred over in other time-travel stories. But it seems to me that there is a definite flaw in his reasoning, which can be illustrated as follows:

If, for example, I should go out into the street and remove the first man I met, it does not seem reasonable that his sudden demise would make any major difference in the population of the world a thousand years hence. There are too many other factors involved.

When Professor Pennypacker killed his remote ancestor, he obviously removed his own existence—removed the possibility of his existence and the existence of all descendants of the Hun. But it can hardly be presumed that the particular progeny of this warrior had no effect upon the rest of the world except to breed with it. Men do other things than multiply—they kill, for instance. One of the Hun's descendants might have been the carrier of a plague that wiped out hundreds of persons. Others could have been the causes of scores of deaths, either through accident or by design. There are unlimited possibilities. And some of his descendants must have done some of these things; to suppose none of them did is to strain the probabilities too much.

So, at the moment when Professor Pennypacker killed this Hun, the existence of a large number of persons was thereby contradicted. But an approximately equal number of different per-

sons must therefore have been assured life, the strains of which would reach from that remote moment until the close of time, for the same general forces which control the population of the world would operate just as efficiently, and the professor's disrupting one small cog in the machinery could have no far-reaching effect.

It seems to me that the above is the major defect in the reasoning behind the story, but there is a further, although minor, point. Mr. Schachner pictures the world grieving for its lost ones. But if they had never existed, the world obviously could never have known of them. Sam explains that they are illusions, figments of imagination; but they were not even that—they were nothing.

As for the sociological implications of the story, I find nothing to disagree with there.

I have not been trying to damn this story. You asked for comment and here it is. The story is good and I enjoyed it. Certainly it is a welcome change from the stereotyped science-fiction story, and I hope you will be able to continue allowing your authors more leeway than the old magazine did.

I am glad to see **ASTOUNDING** back. Keep it up!—Charles Barker, 222 E. Main St., Santa Maria, Calif.

### *"There Is No Such Thing"*

Dear Editor:

If you can spare me a little space and time, I would like to take exception to the statement of Edward F. Gervais, who said in his excellent letter that science fiction and weird fiction are in no wise related, and should not appear in the same magazine.

First, what is science-fiction? Primarily, it is that branch of literature that deals with the physically unexplored reaches of the human mind. The one restriction being that the fundamental basis of the underlying hypothesis must be sound. That is, they must not contradict any *proved* laws of exact science.

Of course, there is much that is unworthy appearing under this heading, but that is to be expected.

Now, what is the basis of the weird tale? It is, let us say, an account of things *super-physical*. While science-fiction deals for the most part with tangible developments, weird fiction takes in

the more obscure and unhuman searchings and mysteries of the cosmos.

As Dr. Smith and others far more able than myself have said, we know very little, and the greater part of our lives and experiences deal with that for which we have found no explanation.

Please also remember that there is no such thing as the "supernatural." Everything in the cosmos is natural, but only an infinitesimal position is occupied by what we know as the physical world, consisting of three dimensions. There is the vast, unthinkable cosmos beyond the senses of man and of which as yet he has only vague sensings.

I will admit that in the field of weird fiction there is a greater possibility for abuse of the freedom offered than anywhere else. And it is probably a too great familiarity with examples of pure sensationalism and rehashed fairy tales that have disgusted Mr. Gervais and made the majority look upon this field with an air of contempt and smiling superiority.

But (I appeal to Mr. Gervais' and to your other readers' sense of fairness and broadened tolerance), is it fair to turn thumbs down entirely on this so promising and interesting field because of the lamentable examples that have appeared?

There is so much in the field of fantasy that would not come under the more rigid rules of science-fiction and it would be most unfair to rule it out with one sweep.

There is the vast field of legends, folklore and ancient beliefs that are a most fascinating part of the story of man and still unexplained. Whence sprang these tales and beliefs? Surely they could not have been invented by peoples who told them around their primitive fires. Surely the Greeks did not invent their myths of monsters and gods, for these tales were old long before the Greek mind was capable of artistic creation.

And what of Mu, Atlans and the long-forgotten Hyperboreans who even the Greeks knew but vaguely as a half-conscious memory which had come down to them from time immemorial?

These and countless others are to be solved by scientists and dreamers; and present-day science does not recognize the occult. In a magazine with a policy such as ASTOUNDING'S, it is most fitting that the weird tale should meet and go hand in hand with the most tangible of science-fiction, the only restriction being that said tales be well written and

carefully thought out with a minimum of sensationalism. As examples of this (the worthy type, I mean) I mention such authors as Clark Ashton Smith, H. P. Lovecraft, Robert E. Howard. But it would be best to keep these at a minimum in each issue.

And now that the above question is off my mind, allow me to congratulate you on the new ASTOUNDING STORIES. Of course, it is far from perfect, but each issue has been much better than the preceding one, and you hold a definite promise of becoming worthy of the name of science-fiction. Hoping to see this in the readers' corner (and that department enlarged)—Stafford Chan, c/o Box 132, Darien, Connecticut.

### *We're Keeping Up the Good Work!*

Dear Editor:

Very pleased to see the return of ASTOUNDING STORIES. In the first issues I was disappointed to see that the stories were not all science-fiction. This had me guessing as to whether you were publishing a science-fiction magazine or not. So I waited to see what would come.

The second issue contained about four science-fiction yarns; all the rest were a mixture of varied types of stories. I still did not know what to think, so I waited for the third issue. And what a difference! Your third issue certainly stepped right out and showed that at last ASTOUNDING is a science-fiction publication.

I certainly agree with Mr. Forrest Ackerman in his interesting letter that we want all science stories and nothing but science stories. So I hope that you will keep ASTOUNDING altogether a science-fiction magazine.

Your "Brass Tacks" corner is excellent; we couldn't do without it. And I'm glad that you're running a serial.

Keep up the good work started with the third issue, and I know that all the readers will be with you!—Lewis C. Duff, Jr., 5 Central Avenue, Bradford, Mass.

### *"Keep out the 'Weird'!"*

Dear Editor:

I am glad to see "our" magazine again being published under a new management. Previously the magazine had a good run



of stories and authors and I hope you surpass or keep even with that standard.

Now is the time to get started right. First, do not confuse science-fiction and weird fiction. ASTOUNDING STORIES would do better to keep to science-fiction. I presume all of ASTOUNDING STORIES departments are not complete in number. I would like to see a readers' department; book review department; and instead of an editorial, a series of science articles dealing more completely and fully with a subject; e. g., on the rocket. Take up materials, fuel, experiments, difficulties to be overcome, etc., in about three connected articles from five to ten pages each.

I like this plan of placing short science notes as space fillers. Please do not give us some snippy, tripey story as a space filler of about two pages. A story needs a little space to develop. How about a real book-length novel as a serial and full-length novelettes of 50 pages? I think five or six stories are about right per issue.

I am sorry if this letter sounds critical, but I am very much interested in "our" magazine.

I don't know your artists, but they are pretty good. I think it's a good idea to give us pictures of the authors and names of the artists (their pictures once). You have the right number of illustrations (10), and they are drawn correctly as to details in the story.

To sum up this long letter, I wish you luck and a knack of improving the magazine with every issue. If you do not slip to bi-monthly, and continue with good authors and stories, I think ASTOUNDING STORIES will be a great success and joy to hungry science-fiction lovers. —Allen B. Brown, Box 307, Trinity, Texas.

*Thank You, Mr. Ackerman!*

Dear Editor:

Did I end my first letter to the new ASTOUNDING with "Anything Can happen"? Gentlemen—everything has!

The December issue is the science-fiction magazine of the month. But first let me say a few words about the November number:

Howard Brown's cover was fine. I liked the idea of the gorgon and the paralyzing rays very much, both in story and illustration. The gas-masked men of the cover and the general plan of picture were very interesting, and also the story

illustrated: Murray Leinster's *Beyond the Sphinxes' Cave*, which I liked because of its brand-new idea well carried out.

I thought *The Lovely Ghost* might be a bit stupid, and hesitated at the title's *Ghost*—but read and was pleased. The ending was the surprise that you like.

*Prisms of Space*: almost like a combination of two or three other stories I've read, but fair reading.

*In the Shadow of the Tii*—a remnant from STRANGE TALES?

*Dead Star Station*: good illustration, and Jack Williamson's lisping Gideon Clew interesting.

*Man from Cincinnati*: the kind of a story a science-fiction fan leaves till last, in case he can't finish the issue. But I was surprised, and quite enjoyed it.

I call *Plane People* best of the issue because it was highly original and written the way science-fiction authors used to write three or four years ago—which I like.

*My Lady of the Tunnel* was a creepy thing!

I didn't particularly care for Mr. Vincent's *Telegraph Plateau*; but then I have enjoyed so many other of his works, and will be glad to see other tales by him in ASTOUNDING.

The *Ancestral Voices* issue! You picked a story there! And your "Thought-variant" idea has flip-flapped the old heart! Swell, I mean! *Ancestral Voices*, your first, was a pip. Worked out grand. Made you tingle with joy at the way it moved along. No controversy; just praise for Nat Schachner's original idea.

*And Farewell to Earth* was grand—illustration and all. If I enjoyed the first, *A Race Thru Time*, what can I say about *Farewell to Earth*? I was attached to it by its unusual number of intriguing ideas popping up all about in the story. I don't know but what you tied with *Voices*, Mr. Wandrei. *Ancestral Voices* was swell for its outstanding main idea; *Farewell to Earth* for its splendid many. Write some more of Web and Ellayn of the latter.

A couple of other awfully interesting stories were *The Machine that Knew Too Much* and *The Invading Blood-Stream*. The issue just oozed fiction of the kind that delights the science-fiction fan. The last two named were such good stories! Different ideas—there's nothing like 'em! And those tales so definitely had them. Listening to voices of

the past like that! And men within men, microscopic but waiting to grow! Stories worth featuring themselves! Good job of raying done in the *Invaders* picture.

Weird-science, *The Purple Brain*. Uh, yes; it was pretty good.

Clark Ashton Smith writes a peculiar story. You should have run footnotes on a half dozen or so of those words: hieratic, phylacteries, sacerdotalism, tutelary, avatar, addorsed. Quite astounding, indeed, was *The Demon of the Flower*, in more ways than one. I can picture a weird plant kingdom ruling a strange planet—I like the idea—but the ending was a little bit fantastic!

It might have been best not to have run two future stories in the same issue, as, for me, I was still thinking of *Farewell to Earth* when *Terror out of Time* took up the same theme. It was different—the black Martian, etc.—and I enjoyed it; but might have liked it better if run at another time. A story like Mr. Wandrei's gives you such an impression that it is hard to switch to another imaginative picture of the future at such short notice.

Will save Charles Willard Diffin's serial until the second part appears.

I congratulate you on the title "Brass Tacks." I thought everything had been used. The letters by Donald Wandrei and Nat Schachner were as interesting as short stories themselves. And you've a bunch of readers that give you comments enjoyable to read. I've no brass tacks to get down to, but only enthusiasm I've worked up—or, rather, you've worked up, with your great publication.

ASTOUNDING STORIES is splendid!—Forrest J. Ackerman, 530 Staples Avenue, San Francisco, Calif.

### October Was the First

Dear Editor:

Here I am again with one of my well-meant missiles after reading through the readers' department and seeing all the letters for the return of Wesso as your staff artist.

Here is another suggestion: Will you have your artists have their names on the drawings? The readers' corner does not seem to be as long as it should. I just finished the story by Wandrei, *Farewell to Earth*, and I thought it was one of the best I had read in quite a while. I

hope to see the story of them on the new world they were going to just as this story ended.

Your feature story was a mighty fine story. What is the artist's name who does your covers?

Before I forget it, the October issue was the first of the new ASTOUNDING STORIES, wasn't it? By the way, instead of having the caption on the cover, just plain ASTOUNDING STORIES, why not have it read like the last few issues of the old one, ASTOUNDING STORIES OF SUPER SCIENCE? And have a consulting Ph.D. as associate editor, to pass on the science in the stories.

I was glad to see a story by C. A. Smith. His stories are quite unique, I think.

Well, before this letter of what I hope you took as constructive criticism gets too long, I will bring it to a close, waiting for next month's issue.—Olon F. Wiggins, 2418 Stout Street, Denver, Colorado.

### Another Demand for the "Weird"

Dear Editor:

Your readers have been so busy objecting to the weird element that has crept into the new ASTOUNDING STORIES that they seem to have overlooked completely a feature that, to me, is most interesting—your little fill-ins of facts not commonly known, but so well worth knowing.

Every one seems to be in favor of strictly scientific stories and emphatically against anything with a supernatural twist. You must please your readers at all times, of course, but I have noticed that a publication very similar to yours has followed this policy with rather poor results. Their stories are becoming rather dull and the same old plots appear again and again, with only slight changes in setting. When the imagination is allowed full play, with no scientific fences to restrain it, new ideas are more easily come across. In nearly all the letters you print variety is asked for, and I cannot see how you will be able to satisfy this demand and not bring a bit of the supernatural into your stories.

It would seem best for you to leave well enough alone and stay as you are, regardless of criticism.

I was sincerely pleased with *A Race Through Time* and its sequel. Also, a sequel to this sequel seems indicated.

You cannot leave those last two humans wandering off into space, in search of a home. You must see them safely to some far planet and make sure that they found a sturdy race, for we cannot bear to think that all life in human form may become extinct.

It is my sincere wish that ASTOUNDING STORIES may live a long and happy life.—Bonnie Woone, 1535 Ocean Avenue, Brooklyn, New York.

### *"First Prize to Harl Vincent"*

Dear Editor:

As an old science-fiction fan, I am mighty glad to see ASTOUNDING STORIES back on the news stands.

The cover is fine and so is the paper. I would not care to see it changed.

The stories in the November issue are all great, but I hand first prize to Harl Vincent's *Telegraph Plateau*. Can't we have a sequel?

Success to the new ASTOUNDING STORIES!—James Montanari, 58 Robie Avenue, Buffalo, New York.

### *A Comparison*

Dear Editor:

As I have every issue of the old ASTOUNDING STORIES and have read them very thoroughly, I feel qualified to pass an opinion on the new ASTOUNDING.

First let me express my great delight at the reappearance of the magazine.

Now for the comparison between: (1) the third issue of the old ASTOUNDING; (2) the latest, or third, issue of the new ASTOUNDING; and (3) the last issue of the old ASTOUNDING.

First, the covers. (1) By Wesso; from a technical standpoint very poor, but eminently satisfactory for a science-fiction magazine. (2) Artist unknown;

suitable for other magazines besides science-fiction ones. (3) Cover still by Wesso; no technical irregularities; very good.

And now for the stories. In (1), three short stories, one novelette and one serial. Two of the short stories true science-fiction; one rather poor. The novelette not outstanding and the serial excellent. In (2) we have six short stories, two novelettes, with two of the short stories good (*Terror Out Of Time*, *The Demon Of The Flower*), another very good (*Ancestral Voices*), one of the novelettes (*Farewell To Earth*) good and the serial very good. And in (3) there were five short stories and one novelette, an editorial and a science question department, besides several fillers of a scientific nature. In this issue, all the short stories were very good, with one outstanding; and the novelette was good.

As to the readers' department; I think "Brass Tacks" better than the former "Readers' Corner."

On the whole the new ASTOUNDING STORIES is better than the first issue of the old one, but is, to my mind, behind the last issues.

My suggestions for improvement would be: Get Wesso for an artist. I do not like your method of arranging the table of contents. Get some of the old favorite authors back. For instance, S. P. Wright, R. F. Starzl, Murray Leinster, Ray Cummings—but don't bother with S. P. Meek unless he offers something better than the Doctor Bird stories. C. W. Diffin, Jack Williamson, Clark Ashton Smith, Nat Schachner and Donald Wandrei always were favorites of mine. Hang onto them.

Now I think there is only one more matter to be taken up—your "Thought-variant" story idea. This is an excellent feature and I only wish some one had thought of it before.

May your shadow never grow less!—J. J. Johnston, Mowbray, Manitoba.

*If "Rebirth" brought home the idea that science may have its dark ages—"The Man Who Stopped The Dust," next month's thought-variant, will bring home the idea that super-science may discover some imperfections in the world are necessary.*

GEE... I'd sure like to have real HE-MAN muscles!

So would I, but it takes a long while

**"Bunk!"**  
—says

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Both these ideas are all bunk—and I have PROVED it. All I need is 7 days to prove what I can do for you! And I don't need any apparatus either. In fact, I have no sympathy with apparatus at all—don't believe in it. It is artificial—and it may strain your heart or other vital organs for life!

**NATURAL Methods Are All I Need**

On this page you will see an actual photo of how I look today. This picture has not been changed in any way. No muscles have been "painted on." This photograph is the camera's honest proof of what I have done for MY body. I myself am ready to prove what my secret of Dynamic Tension can do for YOURS!

To look at me now you wouldn't recognize me as the same man I was a few years ago. Then I was a physical wreck, a 97-pound weakling—flat chested, spindly legs, arms and legs like pipestems.

I was worried—and I had a right to be. I decided to study myself, to do something about my body. Then I made a discovery. I found a new way to build myself up. A way that was simple, natural, quick and sure! "Dynamic Tension" is what I called it.

I put this secret to work. And in a short time I had the kind of body you see here—the body which has twice won the title of "The World's Most Perfectly Developed Man."

**This Secret Has Helped Thousands**

Thousands of other fellows now know this secret, too—and know from their own personal experience what Dynamic Tension has done for them. When they turned to me for advice, they were just as frail and puny as I once was. Now they are life-sized examples of what a man can and ought to be—with mighty energy, tireless endurance, and muscles that stand up like bridge-cables all over their bodies.

I have written an interesting booklet, filled with pictures, which tells my story—and theirs. I would like to send you a copy of it entirely free.

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I'd like you to know what Dynamic Tension has done

for me—what it has done for others—and what it can do for you! This little coupon will bring you my free book, which tells all about it. There is no cost or obligation of any kind—and no one will call upon you.

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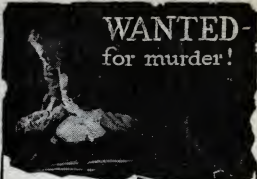
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